

Military Review

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U. S. Army Command and General Staff College, Fort Leavenworth, Kansas

BIRTH OF A BINATIONAL COMMAND

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UNITED STATES ARMY COMMAND AND GENERAL STAFF COLLEGE

FORT LEAVENWORTH, KANSAS



COMMANDANT

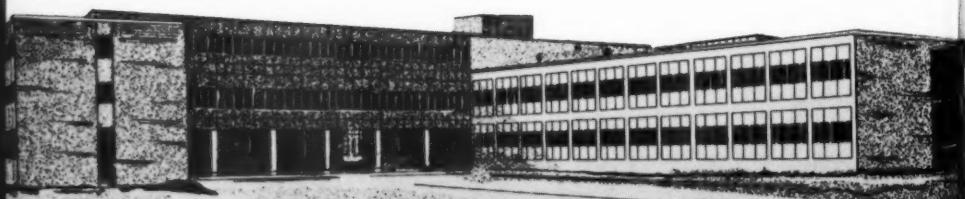
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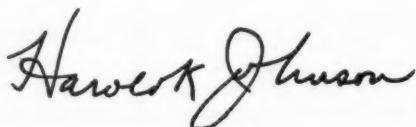
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U. S. ARMY COMMAND AND GENERAL STAFF COLLEGE

FORT LEAVENWORTH, KANSAS

It is a pleasure to introduce with this issue a new edition of the **MILITARY REVIEW**. The new format and larger type faces are for your reading interest, convenience, and comfort. A slightly larger magazine size accommodates these changes without sacrifice of content and convenience.

Simultaneously we are inaugurating a new program of coverage featuring articles on selected subjects of military significance by prominent military and civilian authorities. We will continue to welcome and encourage the voluntary expression of military thought. We will disseminate information, ideas, and doctrine developed at the College which are of interest to the Army and the military profession at large.

A handwritten signature in cursive script, appearing to read "Harold K. Johnson".

HAROLD K. JOHNSON
Major General, USA
Commandant



BIRTH OF A BINATIONAL COMMAND

Major General John P. Daley, *United States Army*

A MAJOR problem facing the United States Army is how to provide adequate nuclear firepower to the ground forces of our allies—without dissipating the limited resources of US Army personnel and equipment.

The first step toward solution, and a good one, was the creation of the US Army Medium Missile Command. Within the US Army Missile Command were concentrated all the means, direct and indirect, necessary for the delivery of nuclear weapons at the proper time and the proper place. The supported allied forces for their part were to furnish all other types of landpower. A typical example was the First US Army Missile Command, the striking arm of the Southern European Task Force (SETAF), deployed in Northern Italy in the fall of 1958. SETAF was an all-US force placed in direct support of Allied Land Forces Southern Europe, a North Atlantic Treaty Organization force principally Italian.

The integration of national forces thus achieved was essentially an integration at army group level. The question immediately arose as to whether additional savings in US Army personnel could be realized by integration at a lower level, that is, within the nuclear delivery force itself. The transition of SETAF from an all-US Force in January 1959 to a binational Italian-American force has given a clear answer. A binational nuclear delivery force can provide the necessary capability at less cost in US men and equipment than can an all-US nuclear delivery force. This is important to both the United States and our allies since it is to our mutual advantage to make the best use of combined resources in manpower and equipment.

The analysis in this article centers around the organization, training, and equipment of SETAF. However, in considering the possible projection of landpower, the lessons learned may

Teamwork among allies is the most significant lesson of World War II. Today, the Southern European Task Force is a striking example of moral and physical strength attained through mutual understanding

BINATIONAL COMMAND

well have application in other areas. Indeed, it is proper to speculate that the same sort of lower unit integration applied to the projection of US airpower or US seapower might result in similar personnel and equipment savings.

US Army Missile Command

In order to understand the organization, training, and employment of a binational missile force it is necessary first to examine the organization of a US missile command. In a US missile command there are units for the delivery of nuclear weapons, target acquisition, security, and for semi-independent logistical operations.

Today, the nuclear delivery units consist of *Honest John* rocket battalions, *Corporal* missile battalions, and engineer units possessing a nuclear demolition capability. Tomorrow, they may include such weapons as the *Little John*, *LaCrosse*, *Sergeant*, *Pershing*, and possibly the *Davy Crockett*. Because of the short range of the *Honest John* and the fact that the missile command is ordinarily deployed in support of two or more corps, more than one battalion of *Honest Johns* is a normal requirement.

In regard to the *Corporal*, the number of units is not so much a ques-

Major General John P. Daley, Deputy Chief of Staff for Operations, United States Army Europe, is a 1931 graduate of the United States Military Academy. He served in Europe during World War II. In the Korean War he was with the I Corps and was artillery commander of the 2d Infantry Division. He was Director of Special Weapons in the Office of the Chief, Research and Development, Department of the Army, and until recently was Commanding General, United States Army, Southern European Task Force.

tion of range and front covered as it is the number of rounds a unit is capable of delivering in support of the front in a given time period.

The capability of the engineers is measured by the number of nuclear assembly and test teams in the unit. When these are measured against the proposed employment, the size and number of the engineer units can be determined.

Target Location

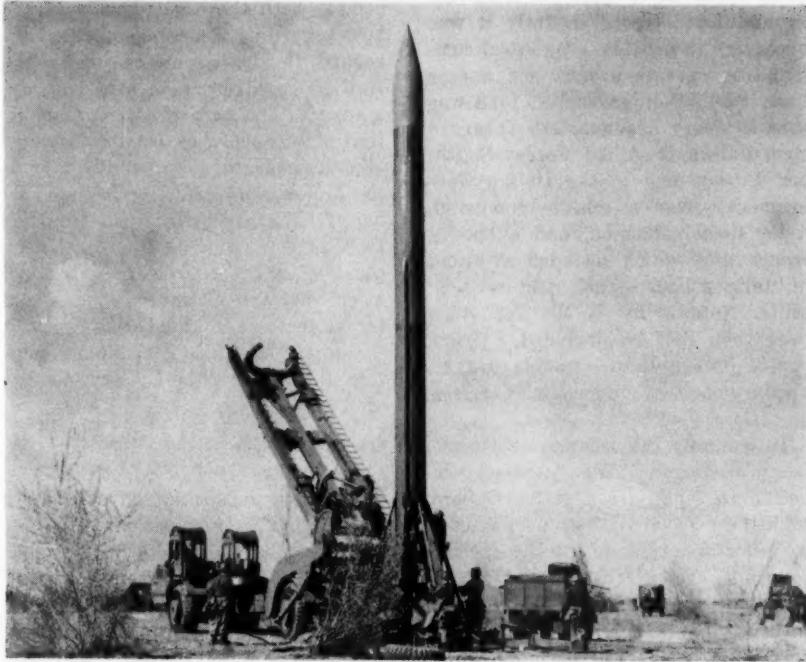
The purpose of the aerial surveillance unit (Sky Cavalry) is to provide sufficiently accurate target location data for use in the preparation of firing data. The unit's primary mission is target location. In the accomplishment of this mission the unit does develop valuable intelligence data for the supported force. However, this should not be allowed to interfere with the primary mission. The means at the Sky Cavalry's disposal include visual and photographic observation from aircraft such as the *L-19*, air-landed or air-dropped teams (landed by helicopter or dropped by the *U-1A Otter*), sidelooking radar, ground observation radar with moving target indicator, and the surveillance drone.

It must be recognized that the overall physical security of the missile command is the responsibility of the supported forces. However, for protection against guerrillas or parachute troops some infantry or cavalry units are desirable for close defense of the delivery units.

As for logistical support the missile command must be capable of operations in an almost independent capacity; therefore, it is necessary to provide a substantial supply and maintenance capability of all types including third echelon maintenance. The ordnance requirements are both spe-



First *Honest John* firing by Italian troops on the Adriatic Coast



First US Army Missile Command positioning a *Corporal* in an Alpine riverbed

BINATIONAL COMMAND

cialized and heavy in proportion to the size of the command. Similarly, because of the extended distances over which the command deploys, the signal unit must be large and needs the type of equipment ordinarily provided a corps signal company.

Despite its own logistical capability, the missile command can support itself logically only after resupply has been delivered to the area of the command. This means that if the missile command is deployed in an area where there are no other US troops, a logistical support unit must be deployed for the support of the missile command.

Deployment in 1958

A US missile command, such as described here, was deployed in Italy in 1958. Since there were no other US ground force troops in Italy it was necessary to provide a logistical command to operate a port and supply base. SETAF in December 1958 was a supervisory headquarters (charged with liaison to Allied Forces Southern Europe and to the Italian Government) over a missile command, a logistical command, and a special troops unit which included aviation, military police, signal, and medical units. Noteworthy is the fact that even then SETAF included a crack *carabiniere* unit to provide Italian military police support in garrison and in the field.

In planning the creation of a binational command it was necessary to decide in what areas Italian troops could best replace US troops. A cursory examination of the logistical command showed that it had an almost purely US mission, the national responsibility to provide logistic support of US troops. Furthermore, while all logistical command troops were

US troops, they were outnumbered by the Italian civilian employees of the logistical command. The logistical command was, in fact, a binational force of US military personnel and Italian civilian employees. There was a limited area within the headquarters of SETAF in which it was possible to replace US officers and men by Italian officers and men thus creating a binational headquarters for what was to be a binational force. The big changes, however, were those possible within the missile command.

The Italians are notably good artilerymen. The rapid conversion of *Honest John* battalions from US manning to Italian manning appeared to pose no insuperable problem; in fact, the major problem was the creation of US warhead support detachments to comply with the requirements of US laws regarding nuclear components. In regard to the engineers, while the Italians could not take over custody, assembly, and test of atomic demolition munitions, they could take over all other engineer responsibilities leading to a marked reduction in the number of US engineers needed. The Italians agreed to furnish all infantry required by the entire force. Furthermore, the Italians agreed to create a target acquisition unit to augment the US unit. This made possible a reduction in the size of the US Sky Cavalry unit.

New Organization

By 30 June 1960, SETAF had two major nuclear capable delivery units: the First US Missile Command and the 3d Italian Missile Brigade. The First US Missile Command included *Corporal* battalions, a nuclear capable engineer unit, a target acquisition unit, a large signal company, warhead support detachments for the Italian



Sky Cavalry in action. Airdrop from an *Otter*



SETOF engineers training in the Alps

**Motor park of a missile command signal unit**

nuclear delivery units, and direct support supply and maintenance units for the US missile command. The 3d Italian Missile Brigade included *Honest John* battalions, infantry, engineer, and signal troops, the nucleus of a target acquisition unit, and a direct support supply and maintenance unit for the Italian missile brigade.

The reorganization saved the US approximately a third of the US personnel previously required. Furthermore, since the United States furnished only the specialized equipment for the Italian nuclear delivery units, there was a considerable saving in equipment. Yet, the new organization is capable of discharging the mission of the old and has a much greater

growth potential. This growth potential is of particular importance to Italy and to NATO. The 3d Italian Missile Brigade has the capability of absorbing additional *Honest John* battalions or other type missile battalions without any major change in its organization or structure. The requirement for additional US personnel as new Italian battalions are added is simply a requirement for additional small warhead support detachments within the First US Army Missile Command.

Teamwork

The one essential ingredient for a successful binational command is complete cooperation. Teamwork if you

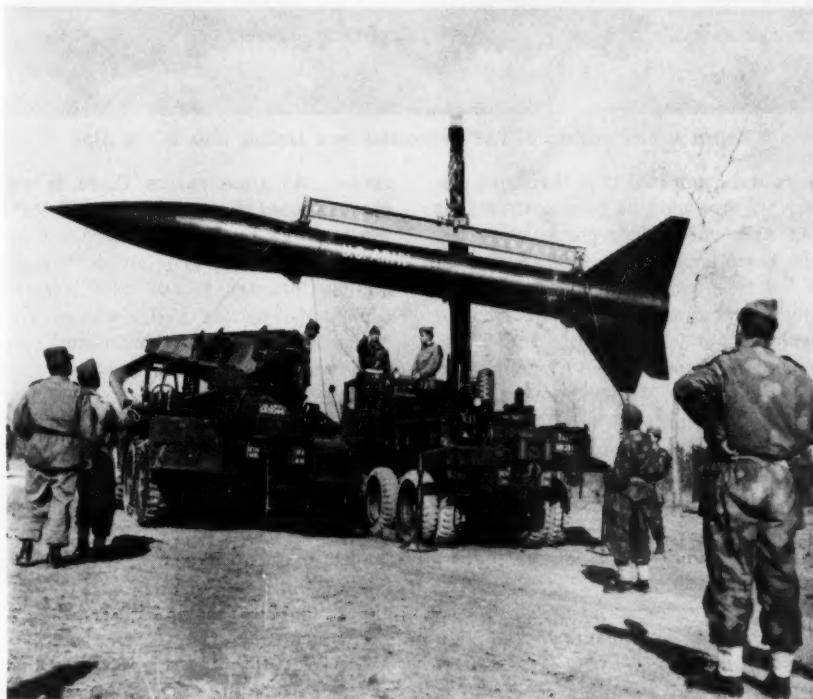
will. The First US Missile Command and the 3d Italian Missile Brigade are nondivisible partners. For example, the missile command's *Honest John* warhead support detachments must train, maneuver, and, if necessary, fight as an integral part of the Italian *Honest John* battalions. On the other hand, the Italian infantry of the 3d Italian Missile Brigade must train, maneuver, and, if necessary, fight to defend not only the 3d Italian Missile Brigade but also the First US Missile Command.

Transition Problems

As SETAF began the transition to a binational command, the first problem was the training of Italian *Honest John* battalions. The keys to success

were competent instructors, clearly worked out lesson plans, carefully prepared training aids in the Italian language, and skilled interpreters. The most difficult coordination problem was that of maintaining the capability of the US battalions while training Italian battalions and using the same equipment both to maintain a tactical capability and to further the training mission.

The Italians furnished a cadre consisting of officers and noncommissioned officers well-skilled in all the technical and tactical aspects of medium artillery. After six weeks of cadre training, the cadres, with technical advice from the Americans, undertook the training of their battal-



Italian-American teamwork during training of cadre for 3d Italian Missile Brigade



Italian soldier guiding SETAF helicopters to a landing area in the Alps

ions and completed it in three months. Within five months of the time that the first cadreman reported, the Italian battalions had successfully passed a US type army training test including a firing test on Asiago Plateau which is 5,000 feet in elevation. These tests were administered by US *Honest John* experts. With these training tests completed the Italian *Honest John* battalions took over the missions of the US battalions and the US *Honest John* battalions ceased to be part of SETAF.

The training of the *Honest John* battalions was only one aspect of the training program. Inasmuch as the *Honest John* equipment was entirely new to the Italian Army, it was necessary to run training courses for Italian supply and maintenance per-

sonnel. As time passes there is an obvious need for extending US-Italian training in the specialized use of engineers, target acquisition troops, and of infantry troops with missile commands. As far as US troops are concerned, the attitude must continue to be one of complete helpfulness and noninterference.

One useful device in clarifying logistic problems regarding the US equipment in Italian hands has been a monthly meeting scheduled by the G4 of SETAF. This meeting is attended by representatives of the 3d Italian Missile Brigade, the Italian logistic support installations, US SETAF technical services, of Military Assistance Advisory Group Italy, and of the Directorate of Artillery of the Italian Army. The meeting isolates

any problem areas and ensures quick correction by the responsible agencies.

Contact Teams

Another useful device was the creation of US technical service contact teams. These small groups of specialists visited the Italian units to check on US type equipment only, gave assistance and advice where possible, and reported the results of their visits to the 3d Italian Missile Brigade. The team members were not inspectors for SETAF but rather technical advisors for the Commanding General, 3d Italian Missile Brigade, and his principal commanders and staff officers. The actions of these contact teams have been exactly in line with SETAF's over-all philosophy: Help always; interfere never.

From the viewpoint of the senior

commander of a binational force the training problem is not one of training Italian infantry, or training Italian parachute troops, or training Italian engineers. This is a task for the experienced Italian officers and non-commissioned officers. The problem is to define requirements peculiar to a nuclear delivery force and to assist the Italian commanders in developing procedures by which already trained Italian units can meet these specialized requirements.

Specialist Training

Like an all-US nuclear delivery force, a binational nuclear delivery force contains a great number of specialists. For this reason it is essential that the units have ample time for specialist training. This must be considered when scheduling field exer-



Italian Alpini entering a SETAF helicopter during an Italian-American exercise

cises for the force as a whole. If you spend week after week maneuvering the force up and down the plains and mountains, you will have an organization which appears fine and is absolutely worthless. It simply will not be able to deliver a working weapon at the end of the proper trajectory.

On the other hand, in a binational command it is doubly important that about every two months a field exercise be held which includes all elements of the command. In any missile command this is important simply to prevent the organization from degenerating into a mere aggregation of specialists. In a binational command, in addition, field exercises are the best means of fostering the needed cooperation, trust, understanding, and essential teamwork.

The US elements of a binational force are in an advantageous position to benefit from training with units of an ally. This is not limited to major field exercises; it reaches down to small unit level. For example, SETAF aviation and engineer units have participated in many small unit Italian exercises, principally with the highly competent Italian Alpini troops. The US target acquisition unit participates in so many Italian exercises that there is a regular monthly meeting between SETAF representatives and representatives of the Italian Corps to schedule SKYCAV participation. The more familiarization US units can get, day by day, with Italian units the better. The US units must be prepared to operate and fight in what is, naturally, an almost wholly Italian military environment.

The employment of a binational nuclear delivery force does not differ to any great extent from the employment of a purely US missile command.

In either case, if the delivery means and weapons are few and the front is wide, the need for close centralized control is obvious. In either case, if the delivery means and weapons increase in number, or if the sensitive areas of the front are rather limited in extent, the possibilities of decentralization are considerably enhanced. With centralized control the essential liaison may be liaison with only one or two major headquarters. With decentralized control the liaison problem becomes more and more difficult. In fact, providing the necessary liaison teams and the necessary communications is one of the most difficult problems when a nuclear delivery force finds itself supporting an assortment of units, corps size and larger.

The problem is further accentuated by the necessity for crossing the language barrier both within the binational headquarters and at a number of supported headquarters. In this area prior preparation pays great dividends. Careful selection of personnel, well-designed standing operating procedures for liaison personnel, reduction of unnecessary transmissions, bilingual codes—all these can help materially in reducing the difficult communication problem. In addition, continuing study of the host country language, by US personnel at all levels, has been found to pay dividends in SETAF.

Summary

A binational nuclear delivery force is a fine means of maximizing nuclear fire support for an ally at minimum cost to the US Army in equipment and men. In organizing such a force the trained troops of the ally should be used as units wherever possible, aug-

menting these units as necessary by US warhead support detachments. From the operational viewpoint the binational unit should be directly subordinate to the senior commander of the supported allied force so that the commander of the binational unit is, in fact, an advisor to the allied force commander in the use of nuclear weapons. In training, capitalize on the national capabilities to train the applicable units. From the binational commander's standpoint, put the emphasis on training to meet the peculiar requirements imposed by the nuclear delivery mission. In employment, employ the binational command as you would an all-US command: that is, use it in the best way to make its nuclear capability completely responsive to the supported commander.

In the final analysis the technical and tactical problems of creating a

binational nuclear delivery force are solvable by skilled military men, American or allied. It is neither in the technical nor in the tactical field but in the moral field that you will find the essential ingredient. The essential ingredient is an attitude of complete cooperation on the part of the officers and men of the two countries involved. It is on the foundation of mutually complete cooperation that the Italians and Americans of SET-AF have created a binational command. It is perhaps symbolic that the original Italian cadremen are entitled to wear on the left breast pocket of their uniform the insignia of the US Artillery—and perhaps equally symbolic that the Americans of the Southern European Task Force wear a shoulder patch which is adapted from the heraldry of the great Republic of Venice.

In developing military strength, we have joined with the other free nations of the world in a cooperative effort to ensure our common defense through collective security. This collective security system provides the foundation of our own *national* security system. It represents a vast, widespread, and impressive total of strength. In contributing to this strength, we threaten no nation. The purpose of our effort is to deter war by promising the sure defeat of aggressive attack upon us or our allies.

The forces which make up our military strength are versatile, flexible, and powerful. They require—and include—the strengths and special capabilities of all our Armed Forces, organized under the type of control and coordination to ensure their most effective employment in combination. Where appropriate, they are united under centralized direction with the forces of our allies. I can assure you that the maintenance and continuing improvement of this combined capability is the object of the fullest energies of all your Armed Forces.

General Lyman L. Lemnitzer



THE SUVOРОV LEGEND

Major General H. Essame, *British Army, Retired*

WHOEVER teaches military history at a military academy carries a terrifying responsibility. In general it is historically true that the successful commanders of any nation tend to assume the mold of the great military figures of its past. The Duke of Wellington set a stamp on the British Army which has never been effaced; the spirit of Grant, Sherman, and Robert E. Lee is evident in the operations of Bradley, Patton, and MacArthur. The French can never shake off the ghost of Napoleon or the Germans that of Frederick the Great or the Elder Moltke. So with the Soviets now and in the future, it is the Suvorov myth which provides a clue to their present and future military trends.

The first graduates of the 20 Suvorov academies are now rising to po-

sitions of responsibility in the Soviet armed forces. These schools were founded in 1943 to provide trustworthy officers for the Red Army. Boys, generally the sons of officers and soldiers killed in action or serving personnel, enter the academies at the age of eight or nine and remain for nine years or less, according to their talents.

The standard of instruction in normal educational and cultural subjects is probably as high as in comparable institutions in the West. What is remarkable is their ultimate aim—to produce forward-looking, original, and resilient minded commanders who are at the same time inflexible Communists. This explains the emphasis on the study of military history from an early age, centered around the Suvorov theme. Who was Suvorov?

The Suvorov story lends itself admirably to a doctrine favoring highly mobile and indeed reckless operations conducted at lightning speed

Emphasis on Rank

My own interest in this national hero arises from an official party which I attended as a guest soon after the end of World War II. We were still Allies and the atmosphere was cordial and most correct. What surprised me was the emphasis on rank: for colonels and below it was red caviar, for the more senior it was black; only colonel-generals apparently sat down to dine. Thus I found myself in the second class surrounded by about 30 officers of my own rank.

Inevitably we found a common interest in the study of each others' medals and decorations. The most prized obviously was the green *moiré* silk ribbon of the Order of Suvorov. There are three classes indicated by the number of orange stripes. Here was a safe topic on which I thought I could get my hosts to expand. I said—which was the truth—that I was most interested in Suvorov and would like to know what they thought of him. So far as I was concerned, the day was saved. We were on ground on which they were prepared to maneuver for the rest of the evening. No one could possibly run a security risk in discussing the operations of a general who had been dead for a century and a half.

Suvorov evidently had imposed his

Major General H. Essame, British Army, Retired, is a lecturer in military studies under the auspices of the Universities of Oxford, Exeter, and Southampton. He received his commission in 1915 and served in an infantry battalion in World War I. During World War II he commanded an infantry brigade from Normandy to the Baltic. He retired from the service in 1949 and presently is a member of the Institute of Strategic Studies.

personality on the Russian forces as indelibly as Napoleon on the French Army. Since then I have read everything I could concerning this remarkable man who, more than any other general, enabled Catherine the Great to extend Russia to the Crimea and the northern shores of the Black Sea, and to absorb the Ukraine and Lithuania. The search brought vividly to life a bizarre world of sophistication and barbarism, artistic achievement and moral anarchy, freedom of thought and ruthless repression—the world in which the great and enigmatic power which threatens us today was being born.

Much has been written about Suvorov in English, French, and German, most of it rather stuffy and reeking of the study rather than of the practical atmosphere of war. Much of the misunderstanding of Soviet military psychology since 1942 may ultimately be traceable to this military-scholastic neglect. Suvorov fascinates the writers of short articles in Western military magazines. A good deal of Soviet comment on him obviously is blatant propaganda. "Suvorov—a shout of victory and an eternal reminder of the unshaken power of Russian Arms." Everything is grist for the Communist mill—even historical fact.

What, therefore, is significant today is not Suvorov as seen by the true historian, but the image of the man and what he stands for in the eyes of the Soviet soldier of today and tomorrow. Hence this attempt to set out in reasonably concise form the blend of history and myth which is the essence of the Suvorov cult as a prime factor in the maintenance of Soviet military morale.

THE SUVOROV LEGEND

Origin and Early Years

Alexander Suvorov was born in 1729 and is thus almost exactly contemporary with Catherine the Great. His family was of Swedish extraction and his father a general. This Swedish strain explains much. His military thought obviously owes much to the influence of Charles XII; his education was that of an 18th century aristocrat with a strong classical bias. He learned to read French, German, Polish, and Italian. In later life he learned Greek, Turkish, and Tartar and even studied Finnish.

At the tender age of 12 he was enrolled as a private soldier in the Semyonovski Regiment but did not actually join until he was 17. He was not commissioned until he had completed eight years in the ranks. Much capital is made of the fact that he was an exemplary soldier. Thereafter his promotion was rapid. Within three years he had risen to a lieutenant colonel.

He had an admirable education—an academic youth followed immediately by seven years' close personal contact in the ranks with the Russian soldier, then rapid promotion at a time when a fighting battalion commander probably is at his best, that is, between the ages of 27 to 30. His service in the ranks also made it possible for the Communist Party to carry forward the Suvorov tradition from the Imperialist period to the present nominal proletarian regime.

Major Campaigns

There is a touch of the fantastic in all of Suvorov's campaigns in the Balkans and Southern Russia. Frederick the Great said of the First Turkish War that it was a "Contest between a blind and a one-eyed man." In all of

them there is something of the spirit of that well-known poem, "Abdul the Bulbul Amir"—

*Now the heroes were plenty and well known to fame
In the troops that were led by the Czar
And the bravest of these was a man by the name
Of Ivan Petruski Skavar.*

There is little point in solemnly wading through the campaigns. In brief they were:

The Seven Years' War in which Suvorov served as a staff officer at the defeat of Frederick the Great at Kustersdorf in 1759. Suvorov was a member of the force which occupied Berlin. A confidential report on him for the period survives testifying to his "Correct eye, speed of movement, dash and indifference to fatigue, hunger and cold."

In the First Polish War of 1768 he appears as a brigadier, joining the army at Smolensk after a 500-mile march from Lake Ladoga, exercising his command en route.

He soon acquired a reputation for rapidity of movement. For instance, in his march on Warsaw he covered 400 miles in 12 days which at that time was considered a remarkable achievement. From this period date some of the more celebrated Suvorov aphorisms such as, "The head must not wait for the tail." Contrary to the orders of his commander, who had ordered a defensive attitude, he succeeded in annihilating one of the major Polish forces. The commander in chief was sacked and Suvorov promoted.

The First Turkish War of 1773 was marked by ineptitude on both sides, the only commander to gain any repu-

tation being Suvorov. His night attack on Turtukai, carried out in depth on the Turkish bank of the river, seems to have been a very remarkable operation. One-third of the force was held in reserve. The plan is remarkable more in spirit than in detail—"Try for a breakthrough; never stop; unit commanders make no reports but act on their own, rapidly and with commonsense." Like many of Suvorov's other battles, this also was carried out in defiance of superior orders.

His part in the repression of *Pugachev's Rebellion in 1774* was not conspicuous. Until the Second Turkish War in 1787 he was engaged in what can best be described as Sepoy Campaigns in the Crimea and the Kuban. These are interesting as examples of Russian colonialism little stressed today. His assignments included the delicate task of transferring the Christian population of the Crimea to the coastal region of the Sea of Azov. He also settled the problem of the recalcitrant Nogais. Potemkin directed him to exterminate the members of this tribe living beyond the Kuban. They numbered 80,000. Suvorov did this with the utmost efficiency and as a result the Crimea passed finally to Russia.

In the *Second Turkish War of 1787-89*, as commander in chief, Suvorov achieved his most overwhelming victory at Rymnik. The combined Russian and Austrian forces were outnumbered by the Turks four to one. The Turkish concentration, however, was not complete and Suvorov, by means of a wide outflanking movement—initiated apparently on the spur of the moment—completely overwhelmed them. Finally, in 1790 he captured the key fortress of Izmail

thus ending the war to the great advantage of Russia.

In the *Second Polish War* he captured Warsaw and removed the unfortunate Poles temporarily from the map of Europe.

This brief outline brings us to his appearance in Western Europe at the end of the century. This is dealt with later.

The Suvorov Doctrine

The Suvorov Doctrine obviously owes much to his studies of the operations of Charles XII. "Tactics," said Suvorov, "without knowledge of Military history is tantamount to groping in the dark." Like Charles XII Suvorov considered offensive action as the overriding principle of war. Hence the often quoted tags: "The Bullet is a hag, the bayonet is a hero." "Reconnaissance! No! They are cowards who desire to give the enemy notice of their approach. One can always find the enemy if one wants to. Columns, bayonets, cold steel, attacks, charges, these are my reconnaissances. The word 'halt' is not to be used. Cut, stab, thrust, drums, and music."

Only once in his campaigns did Suvorov stand on the defensive and then only on orders from high authority. This was at Hirsova in the First Turkish War, and even then he used a carefully concealed reserve for counterattack. It is claimed that he was the originator of the column preceded by *tirailleurs*. This is very doubtful as this innovation is mentioned in Marshal Saxe's *Reveries of 1759* which Suvorov must have read.

In his day the rapidity of his marches was celebrated; many were carried out at night. In the Kuban

THE SUVOROV LEGEND

operations he made his cavalry and infantry interchangeable.

After offensive action, according to Suvorov, surprise is the next vital principle—surprise obtained by speed, speed in conception and execution. A Polish comment on him states:

Suvorov is only fit to fight bears. If you expect him in front, he attacks you in flank and rear. We fled more from surprise and alarm than because we were beaten.

His emphasis on the importance of surprise had its bad side. His allies, the Austrians, in the Second Turkish War found him most secretive and unpredictable.

Suvorov's third principle was that of "annihilation" which still, rather ominously, survives in the current list of Russian principles of war.

His attitude toward logistics seems to have been perfunctory. The only reference to this subject is an order sent in 1796 to his Quartermaster General, Colonel Daykov, just before the start of a campaign, "If all is not in order, I will hang you, despite my personal high regard."

It is, however, as a trainer of troops for battle that Suvorov is probably most significant. The Susdal Regulations which he drew up for his first command, the Susdal Regiment, have a modern ring. They emphasize the need for every individual man to understand the task and stress importance of team spirit and cooperation. The general trend is aggressiveness. "Only men determined to win or die can win a battle." The importance of hard marching is high lit. "Victory depends on the legs; the hands are merely the tools of victory." Training in night movement is all important—in fact training for all operations.

Hence the Suvorov slogan: "Difficult in training, easy in battle."

As a regimental commander he is said to have set up two schools in the hope of reducing illiteracy.

These ideas are consolidated in his book, *The Art of Victory*, published in 1796. The emphasis is on the overriding importance of morale, offensive action, and speed. The book in many ways is very modern in outlook and reads rather like many Western training directives today. The soldier should be taught only what is essential for the battlefield. The individual must learn to use his initiative. Finally, Suvorov said that a high proportion of the Russian Army ought to be kept permanently on a war footing in peacetime—intensively trained and ready for instant action.

His attitude to amenities was Spartan—"The more comfort, the less bravery." He also points out the need for rehearsing battles whenever possible. He even conducted two-sided exercises in which both sides charged home swinging right at the last moment. This seems to have resulted in a number of casualties owing to the fact that the distinction between right and left was not always understood in the Russian ranks. Surprisingly, Suvorov lays no great stress on numbers, his view being that "Wars are fought not with numbers but with knowledge."

To sum up, the Suvorov Doctrine is that dogmas, preconceived ideas, and readymade formulas are anathema. In battle everything is a matter of judgment and commonsense.

From the mass of legend, fact, and anecdote connected with Suvorov, there emerges a profile of a highly intelligent and eccentric egotist.

Personal Characteristics

Suvorov was small in stature and of slight physique but very brisk in movement. The story that the Czar, Peter II, promoted him from captain to colonel to remove a monstrosity from the Imperial Guard, can be discounted. His portraits reveal a sensitive, rather attractive face. However, he enjoyed the apparently rare distinction among officers of the Russian Army of being only a friend of Catherine the Great.

His habits were Spartan. He always insisted on sleeping on a truss of hay—even as a commander in chief in Vienna. He hated what he considered objects of luxury, including a pocket handkerchief. He had a predilection for wearing a private soldier's uniform and in warm weather would walk about unconcerned, dressed only in his underclothes. In winter he wore an old threadbare cloak; he rode any horse which came to hand.

Apart from one or two exits during the night to ensure that the sentries on his guard were doing their job, he normally rose at dawn. He is then said to have crowed like a cock to salute another day of service to the Empress. There followed 30 minutes of physical exercise, after which his servant soused him down with buckets of cold water. He then drank his tea, said his prayers, and ran over the lesson in Turkish, or whatever other language he happened to be studying, which he had tackled the night before. This done, he put on his uniform and attended the mounting of the Guard.

He had only one meal a day—dinner—at the odd hour of nine in the morning. His servant stood immedi-

ately behind him while he dined. If he exceeded the limits of moderation, the servant checked him. Invariably Suvorov asked, "Whose orders?" The servant replied, "Marshal Suvorov's orders." "Then," said the Marshal, "he must be obeyed." Similarly, his staff stood behind him when he dealt with his correspondence. If he sat too long, their duty was to tell him he must go out to see the troops and not waste time pushing a pen.

Like General Patton and Field Marshal Wavell he was addicted to writing poetry, the beauty of which (if any) is lost in translation. He also was an ardent bellringer, presumably because this art enabled him to combine physical and artistic exercise. In this connection it is interesting to note that Epaminondas played the flute and the Duke of Wellington the triangle. The musical accomplishments of the higher commanders of World War II so far have not been revealed.

Philanthropist

There was a kindly side to Suvorov. Like Field Marshal Alanbrooke, he showed great interest in birds, even going to the length of having an enormous greenhouse constructed for his pets as a refuge for them during the winter. In the spring he released them. He seems to have been very fond of children too and to have started something resembling a child welfare campaign on his estate. As he had 10,000 serfs, his weekly parades of the children and their mothers must have been remarkable functions. After his death it was discovered that the unknown donor of large sums of money sent to the prison in Moscow every Easter for the redemption of debtors was Suvorov.

One of the traits which no doubt

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has endeared him to his present-day contemporaries was his loathing for the atmosphere of courts and polite society. He seems to have gone out of his way to behave like a boor.

When the Empress called in his corps from training for a ceremonial parade and asked him to name his reward for services, he replied, irritably, "Pay the hire of my lodgings, three and a half roubles."

His dislike for the conventions of polite society did not prevent him from having an almost childish love of decorations and orders. He was festooned from head to foot. Undoubtedly he was never so happy as when surrounded by and talking to troops. When annoyed he could be bitterly sarcastic—a Russian trait still noticeable.

To sum up, we have the picture of a most unusual and, in some respects, not unattractive man. The resemblance to Nelson, another incompletely adult military giant, is striking. It is not surprising that these two exchanged pictures and letters of mutual admiration.

Penetration by Russian Army

Suvorov's campaign in Italy and Switzerland in 1798 epitomizes the Suvorov technique.

In the autumn of 1798 the Russians joined the coalition of Great Britain, Austria, Turkey, and Naples against France. Catherine the Great was dead and a new czar had taken her place. At British suggestion, Suvorov, who was a popular figure in Great Britain at that time—pies were even named after him—was recalled from retirement and appointed virtually allied commander in chief. His age was 67. His appreciation of the problem be-

fore him is a striking example of his unusual epistolary style.

Austrians and Russians will act against France as follows:

1. *Nothing but the offensive.*
2. *Speed on the march, energy in attacks, cold steel.*
3. *No high-flown theory—deal with problems on their merits.*
4. *Full power to the Commander in Chief.*
5. *Fall upon the enemy and beat him in the field.*
6. *Lose no time in sieges.*
7. *Never break strength to protect different points. If the enemy possess these points so much the better; he is all the nearer to being beaten.*
8. *Go forward fighting without stopping and straight to Paris. Never encumber yourself with empty manoeuvres, countermarches or feints which only please military theorists.*
9. *No delays, false prudence and jealousy in the Cabinet and the Ministry. A young Marlborough will come to light and not a few Suvorovs.*

It is laughable in form, but in fact it is the technique of "blitz" 140 years before Rommel and 70 years since Charles XII.

Suvorov arrived in Vienna in March 1799 with a large army, practically no staff, and apparently no logistic support whatever. Four members of the Austrian High War Council waited on him with a plan of campaign for an advance to the River Adda. He drew a large cross over it and wrote, "The plan will begin with the passage of the Adda and will end as God pleases." Evidently, Suvorov and his

Viennese allies were not going to get on too well.

The combined Russian and Austrian Armies set off for Verona at 20 miles a day. Before Moreau, the newly arrived French commander, had realized what had hit him, Suvorov had crossed the Adda and cut the road to Milan with a Cossack column. Milan and Turin fell and Moreau fell back into the mountains of Savoy.

So far morale and leadership had triumphed over logistics. Moreau and his army were bottled up in Alessandria and cut off from Masséna's forces in Switzerland. Now, however, Suvorov found himself faced with an administrative breakdown and at loggerheads with the Austrians on whom he depended for his supplies. In spite of this, Suvorov like an infuriated bull now turned against the army of Macdonald moving up from Southern Italy. After a march of 53 miles in 36 hours in intense heat on Suvorov's part, the two armies met on the Trebbia in a head-on clash which lasted three days. On the third day one of his subordinates reported that his companies were reduced to 40 men. He got the reply, "Splendid—Macdonald's are down to twenty." In due course the French Army was destroyed.

The Last Act

Suvorov now returned to the Alessandria area where Joubert had taken charge of the army previously commanded by Moreau. There followed the Battle of Novi at which the French were defeated by Suvorov with very heavy losses. The position of France was now desperate. The Army of the Rhine had been defeated and driven back to the Rhine Valley. Both their armies in Italy had been

destroyed by Suvorov. A British Expeditionary Force had landed in the Low Countries. Bonaparte was locked up in Egypt. There only remained Masséna's army outside Zurich and that was faced by the armies of Korsakov and Hotze on the Rhine.

The Austrian High Command in Vienna accordingly produced what seemed to be the obvious plan. Suvorov must join Korsakov and Hotze and destroy Masséna.

It was now the latter half of September and therefore late in the season for a campaign in Switzerland. Suvorov chose the St. Gotthard route. It was suitable for pack transport only. A bitter dispute arose between Suvorov and the Austrians with regard to the provision of the necessary mules. Suvorov solved it by dismounting his Cossacks and using their horses as pack animals. Three days' rations were carried on the man and four on the mules and horses. The plan involved an advance through mountainous country of 90 miles in seven days. Topographical information was bad.

Owing to the difficulties in assembling the pack transport and the dispute with the Austrians, the advance started in heavy rain five days late on 22 September 1799. At times they bivouacked at 8,000 feet above sea level. There was no hot food. They were faced by a brilliantly led detachment under Lecourbe. Nonetheless, the Russians carried the St. Gotthard Pass by a wide outflanking movement.

There followed a nightmare series of battles under conditions of appalling misery. Despite all this, Suvorov reached his rendezvous with Korsakov and Hotze at Altdorf only one day behind schedule to learn that Masséna

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had already destroyed their armies at Zurich. The five days' delay had ruined the plan. Suvorov still was not beaten. He decided to march east via Glarus and Chur, pursued by Masséna. Suvorov's rear guard, under Rosenberg, defied all Masséna's efforts to bring him to a halt. The climax was reached on the Panixer Pass.

A picture survives of Suvorov held in the saddle by two Cossacks, for he was too weak to stand, and being given a cup of tea heated over a fire made from the butts of the Cossacks' lances. On 7 October he reached Chur. He and his troops had been fighting without a break for 17 days in sleet and snow between 4,000 and 8,000 feet above sea level and they were still fighting.

Field Marshal Prince Suvorov, Generalissimo, Prince of Italy and Count of the Rymnik, died soon afterward.

Conclusions

The story of Suvorov throws some light on a part of European military history which has been little studied. There emerges from it at least a hint of the main springs of present Soviet military values. Suvorov has been built up since the Revolution to stand for certain eternal military verities:

The principles of offensive action and surprise.

The conduct of battle from the front—"Under Eye of Caesar."

That hard living and a Spartan outlook make good soldiers; that excessive welfare enervates and enfeebles; that administration is a principle of war—it should not be the overriding principle; and finally that every private soldier has a share in the commander's plan and must understand it—ultimately he and his commander are one.

This is a harsh doctrine but at least it will produce something which is formidable and ominous.

The martial figure of Suvorov for Soviet youth has a glamor which no one could ever give to the grubby mid-Victorian Marx wrestling with abstractions in the British Museum. It is not surprising, therefore, that when the Russian Army emerged from the Revolution, it looked back to Suvorov as well as Clausewitz; that the young officer trained at the Suvorov academies takes with him something of the original and dynamic qualities of Suvorov into all branches of the national life; that the Order of Suvorov is the highest military honor and that the morale of the Soviet Army is based on some sound principles.

There is in the Suvorov cult something of the exuberance of the Ancient Greek, the same intense awareness of the gamble of life, the same insistence that a man must follow the light of reason wherever it leads him.

In war, according to Suvorov, every new problem must be dealt with on its merits and not by the application of ponderous theory, shibboleths, and formulas. How, therefore, has it been found possible to reconcile the spirit of Suvorov in military matters with the rigid and gloomy dogmas of communism?

I suggest that we need go no further than the New Testament for an answer. The run of the mill of professional soldiers in any army, like the Centurions, are practically minded men with an innate aversion for philosophical and religious speculation. They do, however, feel the need for a Faith. Having once acquired it, they abandon further speculation on the subject with relief. When the Cen-

turion said of the Master that He "Spoke as one having authority and not as the Scribes," he voiced the basic conviction of all true soldiers that what really matters in the end is Discipline.

He looked to Higher Authority for an order and he got it. So does the Soviet soldier today.

The principles of Marx have the sanctity of an order. There can be no further argument.

Doctrine is indispensable to an army—or to any military organization, for that matter. This is true because doctrine provides a military organization with a common philosophy, a common language, a common purpose, and a unity of effort. Doctrine influences, to a major degree, strategic thinking as well as the development of weapons, organization, training, and tactics. Doctrine is the cement that binds a military organization into an effective fighting unit.

I am speaking now of doctrine in its broadest sense. This doctrine includes not only the tactical employment of forces . . . but also the fundamental principles or tenets of Army thinking. These concern such matters as the strategic conditions under which Army forces should be employed, the relation of these forces to those of other services, the operational environments of the field forces, and the basic principles which govern the operations of dual-capable Army forces which can fight in either nuclear or nonnuclear war. In this sense, we might consider doctrine as an Army creed which spells out the way we view our purpose in life and our relation to others.

General George H. Decker

BA-CORPS

Captain Boyd T. Bashore, *United States Army*

CHANGE ad infinitum. SASFA; ROCID, ROTAD, and ROCAD; MOMAR; PENTAGROUP; MAX; INFANA; CLUO; E C H O ; TRAN-SANA; ATFA; and so on. This alphabet soup is indicative of a trend, an obsession for change that has made itself felt at every level in the United States Army. But change is not necessarily synonymous with improvement. To the contrary, many of the proposed reorganizations and studies that our alphabet soup identify share in varying degrees a common shortcoming. They abase a principle that we must begin to apply to any future reorganization. The principle is that prestige and authority must be given to those officers who command.

In the past we have either haphazardly applied or completely ignored this principle. Although at first glance it seems to apply to only one small facet of the reorganization picture, further study will show that it is far-reaching. If this principle is not observed, future reorganizations can result only in a continued deflation of the prestige and desirability of command, combined with an opposite and equal inflation of staff assignments.

Problem: Considering the appropriate limits of a staff officer's responsibility and authority, what should be the relative rank of a staff officer as compared to the rank of the com-

mander at the *next lower level*? Should the staff officer be of higher, equal, or lower rank?

Let us compare the rank of general staff officers at corps level with the rank of the next lower division commanders. To refresh your memory this relationship is shown graphically in Figure 1. Notice that in this specific case the division commander, the next lower commander, ranks the corps general staff officers by two grades and the chief of staff by one grade.

But wait! The corps-division relationship that you have just studied is no longer valid. I have devised a new corps staff which incorporates some of the rank relationships of our recent reorganizations. This new staff is called the BA-CORPS (modestly pronounced Bay-Shore). I expectantly and proudly enter the BA-CORPS into the alphabet soup contest. The BA-CORPS rank and prestige relationship with the next lower division is shown in Figure 2.

As you can see, BA-CORPS incorporates the rather interesting principle that the next lower commander, at division, should be ranked by three grades by the next higher commander, two grades by the senior staff officer, the chief of staff, and at least one grade by every other general staff officer on the staff. I can justify this relationship in a number of ways. One

Misapplication of staff and command relationships has led to inflation in rank structure. Organizational changes of tomorrow should be watched to check this continuing inflation at its source

is on the basis of a commonly voiced opinion that our division commanders are not "mature and experienced" enough. They need layers of "experienced" staff officers stacked up above them. Or I might apply another highly popular feeling that the staff officers, especially in the extremely important plans and operations field, are not properly recognized under the present

Army would generate by adopting BA-CORPS.

Where does the prestige, power, and authority lay in BA-CORPS? Under this system would a young officer better aspire to a division command or to an assignment as a corps staff officer? Certainly, where previously we had a corps staff that would hesitate to say "No" to a division commander,

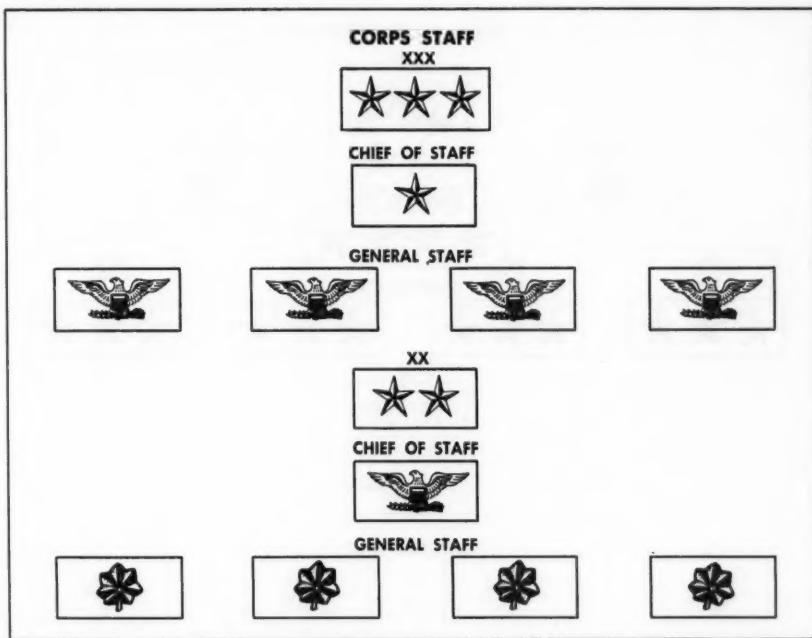


Figure 1.

corps-division relationship. I hesitate to mention *this*, but just think how many more general officer slots our

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the BA-CORPS staff, human nature being what it is, would not only delight in saying "No" but probably would revel in helping the next lower commander "command" his division.

Your reaction of BA-CORPS? Interesting but improbable! We would never permit the command and staff rank relationship to get so out of balance. This relationship will *never* exist in the United States Army. Well,

BA-CORPS

consider the existing relationship between the battle group staff and the next lower commander. (See Figure 3.)

The BA-CORPS, of course, represents a tongue-in-cheek antithesis of my true principle: prestige and authority (rank and pay) should be given to officers who *command*. Relatively, the rank and prestige of staff

I am not advocating that key staff officers be any less outstanding than they are today, but simply that they be outstanding officers one grade or more junior to the next lower commander.

How can this principle be applied to some changes now in the mill? The SASFA division staff now includes two full colonels, where before there

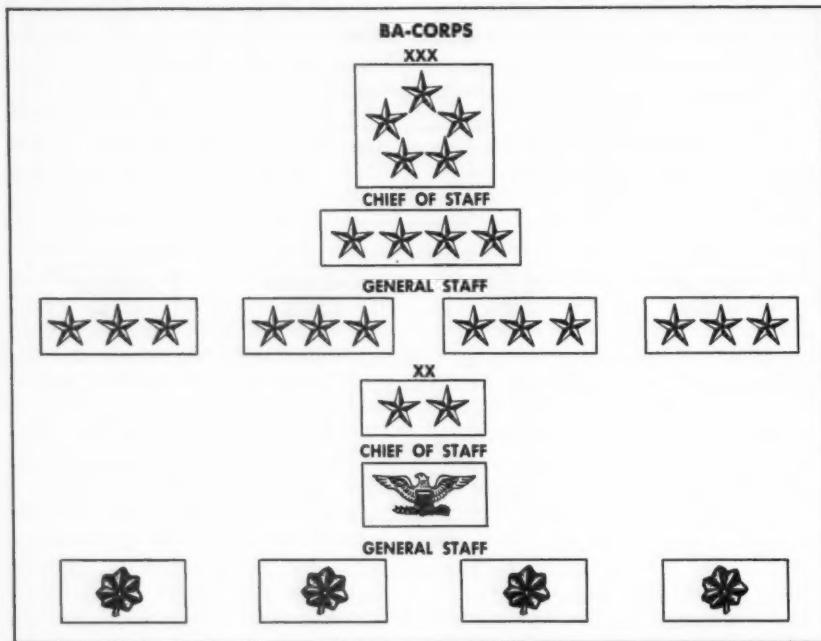


Figure 2.

officers should be deemphasized or at least they should not be further emphasized. The staff officer at any echelon should, in general, be junior to the commander at the next lower level. Only in the most important staff positions, such as the chief of staff or executive officer, should the rank of a staff officer approach that of the next lower commander. Never should he be of higher rank. Be assured that

was only one. These are the Director of Administrative Support (DAS) and the Director of Training and Operations (DTO). This is a 100 percent inflation in the number of colonels on the division staff. The Marine Corps recently has "promoted" its entire division G-staff to full colonel, a 400 percent increase. Thus the insidious BA-CORPS inflation of staffs that already has struck at battle group

level is now creeping into division level. This is preposterous! The DTO and the DAS could operate very well as lieutenant colonels. So could the Marine G-staff.

The prestige and authority of the division-level command group are adequately recognized in the rank of major general for the *commander*. Only at the chief of staff level in

Thus the classic debate at company level about whether companies should be commanded by majors, instead of captains, is really nothing more than an example of the trouble and confusion that develops when BA-CORPS inflation is applied to the company and the next higher headquarters. The truth is that the rank of the company commander is only important in re-

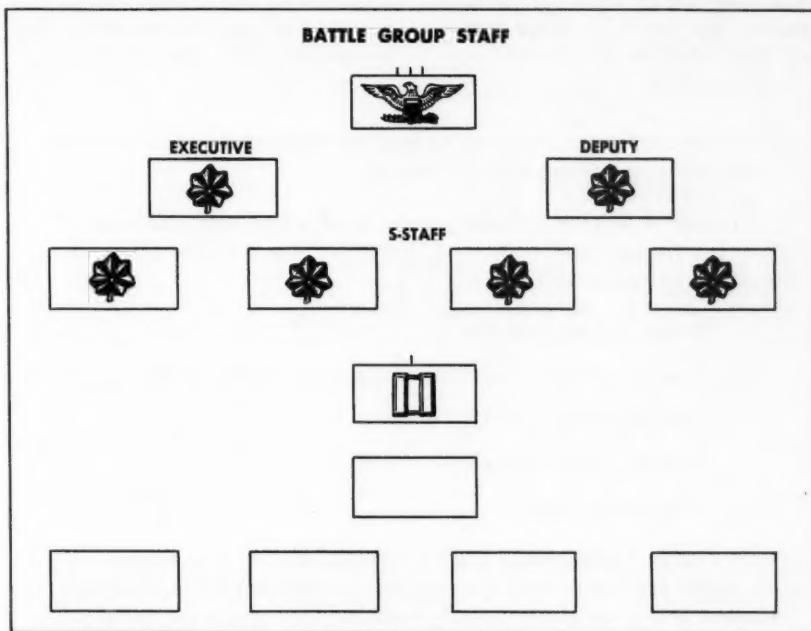


Figure 3.

either of these divisions should the staff rank begin to equal that of the next lower commanders, at battle group and regiment, and then only grudgingly. There is little similarity in the actual responsibilities of the staff as compared to those of the commander, either in combat or garrison. This is especially true in the Marine organization with its three-battalion regiment.

lation to the rank of those above and below him.

Company captain is a splendid rank as long as the next higher S-staff is composed of lieutenants and captains, and the battalion or battle group commanded by a major or, at most, a lieutenant colonel. If the officers on the next higher command group, however, are colonels, lieutenant colonels, and majors back-to-back, then the

company captain is grossly under-ranked and shortchanged in pay for his proportionate share of the *command* responsibility.

At the highest as well as the lowest and intermediate levels we must avoid inflation. There is talk about eliminating the corps. What then will be the rank of the next higher commander above division? Will inflation strike again? No matter what you call this headquarters, be it a "large corps" or a "small field army," the next com-

mand above division should be a lieutenant general's, and the staff should be similar to a corps staff. Save the rank and prestige of full general for the next higher theater, theater army, or even army group.

Only by attacking this creeping inflation at its source, in the organizational changes of tomorrow, can we ever hope to return the prestige and authority of the commander *at any level* to their proper importance and prospective. Let's stop inflation!

I want an America ever ready to meet any challenge with high courage, moral resolution, and constancy of purpose.

I want an America in which may be heard echoed with conviction on countless tongues these noble words which still ring down the years with the sound of trumpets:

'I have just begun to fight.'

'I only regret that I have but one life to lose for my country.'

'Give me liberty or give me death.'

'Eternal vigilance is the price of liberty.'

'Right makes might.'

I want an America whose citizens recognize that the true greatness of our Nation does not lie in its high standard of living, but rather in its high standard of life—the standard of life which has been handed down to us by generations of Americans who counted their worth not in terms of what they had but in terms of what they were. They were most concerned with the spiritual values they were able to pass on to posterity. It is freedom—and those spiritual values which are the sustaining power of freedom—which constitute our most priceless heritage.

Secretary of the Army Wilber M. Brucker

VIEW ON THE SOVIET ECONOMIC THREAT

Sir William Hayter

Lt Gen Arthur G. Trudeau

Charles Nutter

The economic power of the United States has long been a major factor in our military strength. Now the Soviet Union has attained an industrial growth rate which promises strong economic competition.

If this challenger were a nation disposed to live in peace and amity with the world, the situation would be of little direct military concern. Under existing circumstances, however, the economic challenge is directly linked with a potential and, in fact, a clearly stated military threat.

The three articles which follow evaluate the economic threat from widely diverse viewpoints but with conclusions that are quite similar.

This is not a pessimistic appraisal. It is rather a sober analysis taken while we are still ahead so that time may become an ally rather than an enemy.—Editor.

Sir William Hayter:

IS THERE A SOVIET ECONOMIC CHALLENGE?

AN OLD woman, two buckets hanging from the wooden yoke over her shoulders, makes her way to the village pump along a rutted, muddy street. The little cottages are of wood, with tiny, darkened windows leaning at crazy angles. The cottage gardens contain no flowers. The old woman is barefoot. Then, through a gap between two of the leaning cottages, across flat dusty fields and above unkempt birch woods, there appears the tall, glittering spire of a vast skyscraper, capped with a five-pointed red star.

It is clearly not an ordinary economy. The foreground to the scene seems Balkan, the background industrial American. The reality is almost any village in the Moscow *oblast* today. The outside world tends to see the skyscrapers and to forget the old woman with the buckets. But both are essential components of the contemporary Soviet scene.

Challenge to the West?

Can so obviously patchy an economy really be a challenge to the West? In a sense its very patchiness makes it more so. It is because the village has no water supply, the street no paving, and the old woman no shoes that the Soviet Government can afford to build the skyscraper. The government's capacity to repress consumption gives it

immense economic power. This power challenges us in two ways, in its internal deployment and in its impact on the outside world.

The Russians, for so unmercantile a people, have always been good at selling themselves. They have persuaded us all that the Soviet Union's economic growth is unique in the modern world. Her industrial expansion

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rate in recent years has, in fact, not been markedly different from that of Western Germany, France, or Italy. Although she has been growing faster in industry than the North Atlantic



Pan American World Airways

° ° ° The skyscrapers of modern Moscow stand silhouetted beyond the Kremlin and Red Square, heart of Russian imperialism since the Middle Ages. The onion-bulb domes of St. Basil's Cathedral, across the square from the Lenin-Stalin Mausoleum, are a study in contrast between the faith of old Russia and the atheism of the Communist Soviet Union. ° ° °

countries taken as a whole, until lately this has been offset by the backwardness of her agricultural development. But however much Soviet economic expansion has been oversold, it remains real and impressive by its sheer bulk.

The alarming feature of this great expansion is the extent to which its products have been devoted to state needs and, particularly, to military needs. As a result there has emerged that typical modern phenomenon, the very rich government of a very poor people. This very rich government has at its disposal one of the most formidable military machines the world has ever known, and this is made even more disturbing by the proselytizing zeal with which this rich government is animated.

Settling-Down Process

Nevertheless, this great material progress has its compensating side. The best hope for the world is, presumably, that Soviet communism will one day lose its dynamism, its crusading fervor—as other missionary creeds like Islam have in the past—and that the Soviet Union will settle down as a normal member of international society. This settling-down process surely is more likely in a prosperous than in an impoverished society; as Mr. Khrushchev has put it, "we are getting richer, and that makes us more democratic."

As the economy visibly improves, two things seem likely to happen. First, the rulers will realize that they have more at stake, more to lose in a conflict, and so feel less inclined to adventures. Second, the ruled will tend to demand a larger share of the visibly growing assets of the economy, this consumption pressure will

be increasingly difficult to resist, and the proportion of the national income devoted to military ends should sink.

All this, however, is still a long way off, and meanwhile the Soviet Government remains remarkably free to deploy its economic assets as it wishes, at home or abroad. Its impact abroad is twofold. First, the spectacle of a backward country successfully industrializing itself must clearly make a strong impression on other underdeveloped countries wishing to do likewise, and this may incline them to admire and perhaps to imitate the political system responsible for these successes. Second, there is the direct use the Soviet Government can make of the great resources at its disposal.

The Soviet Government could theoretically use these resources in support of its political policies in one or both of two ways. It could use them to disrupt the economy of the Capitalist world by dumping, upsetting prices, or other wrecking tactics. This is a bogey often raised. It is only a bogey so far. Nothing of the kind has yet been attempted. Although there have been sales (for example, of tin) and resales (for example, of cotton) at well below world prices, these all seem to have been motivated by a desire to get foreign exchange at any cost and not by disruptive designs, and they were not pushed far when protesting noises were made by other exporting countries.

Aid Programs

The second way in which Soviet economic policy can serve political ends is in the aid program to underdeveloped countries. The volume of this aid is, of course, minute in relation to Western and, particularly, American aid. But the Soviet Government is

especially well-placed to draw the maximum political profit from such aid, owing to its complete control of all its foreign trade and its ability to mobilize as much of its production as it judges fit for the purpose.

This means that the Soviet Government can easily direct the aid it gives to just the areas and in just the forms in which its impact will be greatest. Moreover, owing to her starved internal economy, the Soviet Union can easily absorb as much as she likes of the underdeveloped countries' exports which the West for one reason or another is often unwilling to take, or to take at a profitable price. For all these reasons the Soviet Government finds it much easier than the West to use its aid to these countries to win friends and influence people there.

Successful and powerful though this program is, it is important not to overrate its impact. The political motives that lie behind Soviet aid have been shown clearly enough in Soviet handling of Yugoslavia where aid was cut off in midflow owing to political differences. This lesson has not been lost on other recipient countries. Moreover, the insatiable demands of the Soviet Union's own internal market cannot always be resisted, and as prosperity grows in the

Soviet Union there may well be less and not more available for politically inspired aid abroad.

Well-placed as the Soviet Government is to use its foreign trade for political purposes, it should not be supposed that this is the only or even the principal guiding factor in that trade. In the present phase of its economic expansion certain imports from abroad, particularly tropical raw materials and certain specialized machinery, are obviously indispensable. The currency to acquire these is not easily earned by Soviet exports, and its acquisition and not the winning of political successes or the disruption of capitalism is probably the main preoccupation of Soviet foreign trade at present.

All in all, our feelings cannot but be mixed as we watch the undoubtedly rising tide of Soviet prosperity. We are inevitably alarmed by the increasing power of the formidable international conspiracy that calls itself the Soviet State. But we also can hope that as its power and wealth increases, so will its envy and fear of the outside world diminish, and that in the end it will begin to think less of guided missiles and more of the old woman with the buckets.

MOVING?

If you are moving, please notify the Book Department, U. S. Army Command and General Staff College, Fort Leavenworth, Kansas, of your change of address. Be sure to include your name, *old* address, and *new* address.

Lieutenant General Arthur G. Trudeau:

SOVIET ECONOMIC THREAT

TODAY, communism, robed in the cloak of Soviet imperialism with all of its sinister facets, poses the greatest single threat to the evolution of mankind toward peace under justice. No comparable threat has existed since the hordes of Genghis Khan sacked Hungary and Poland over 700 years ago.

Understanding the tenets and operations of communism is fundamental to developing objectives and programs to counter this threat and for developing a positive, dynamic approach to a better life for the peoples of our world.

My purpose in presenting this article is to emphasize that a valid comparison of the American and Soviet economies must consider the flexible, integrated nature of the Soviet economy and its use in the total politico-military strategy of communism. In addition, any comparison covering a substantial time period should consider the necessity for better coordination of the economies of the Free World, if we hope to compete with the economic autarky that exists within the Communist orbit of nations.

The impact of the strategic manipulation of an economy should not be overlooked. It is in this field that I am convinced that the Communists have achieved remarkable strength, and it is in the resulting economic offensive that I believe we face one of the greatest challenges to the future existence of the Free World.

I should like to avoid the charge of focusing exclusively on materialism but that is the subject at hand. I hope my unshakable belief in the primacy of the moral and spiritual contest between two great ideologies is not obscured by this study of the economic threat. The hard facts of life, particularly in facing an opponent as amoral and immoral as communism, cannot be disregarded, however. Our greatest hope is that by a better understanding of all facets of the problem, we will pursue with wisdom and determination the policies necessary to defeat the threat which looms ever larger before us.

The points that I intend to develop will show the accelerating nature of

Lieutenant General Arthur G. Trudeau, currently Chief of Research and Development, Department of the Army, has served as a combat engineer, a combat field commander at echelons up through corps, and as Assistant Chief of Staff, Intelligence, Department of the Army. He has had firsthand contact with Communist forces in the field and at the diplomatic level and close contact with Free World leaders in the industrial, educational, and scientific fields.

the Communist bloc economy in comparison to that of the United States. This will not be a fractional analysis but rather an attempt to show the

command nature of their economy where the ingredients for the Communist international strategy are turned on and off, in varying degrees, to suit the policies and designs of the moment. To meet such shifting pressures on a global basis requires the most demanding strategy that the United States and her partners in the Free World have ever experienced. This poses a requirement for definite action—an economic forward strategy.

The Threat

It is a recognized principle that the capacity of any nation to carry out its national objectives is based not only on its national will and military strength, but on the strength, balance, and flexibility of its economy. The Soviets early recognized this principle. In Lenin's "Report to the 8th Congress of the Soviet" in 1919, he proclaimed:

Communism is the Soviet power plus electrification of the whole country. . . . We are weaker than capitalism, not only in the world scene but within the country. . . . Only when the country has been electrified, when industry, agriculture, and transport have been placed on a technical basis of large-scale industry, only then shall we be finally victorious.

When we look at the Soviet economy today, we see that Lenin's goal to industrialize the USSR has been attained. The USSR is the world's second largest industrial power today. She has a gross national product over two-fifths that of the United States and has been growing at a rate more than twice that of the US. If the present rates of industrial growth remain unchanged, the USSR will surpass the US before the turn of the century.

Khrushchev boasts of accomplishing this in a much shorter time.

The comparison of the two economies as they exist today in actual size and output is not reassuring. Our potential enemy is devoting a substantially larger portion of his economy to armament and to rapid expansion of his industrial base by denying consumer goods to his people and imposing a minimal improvement in standards of living on them. While the Soviets export grain to England, we are asked to feed Poland with wheat for which we have no market.

As critical indicators, for a comparison between the USSR and the United States in industrial strength, I have selected production of five primary items: coal, petroleum, electric power, aluminum, and steel.

The United States is still ahead of the USSR in the production of all of these items, but this is not the whole story. We have particular superiority in petroleum and electric power production, but there was a significantly small difference in steel production during the strike year of 1959.

Steel

Steel, a basic item for industrial output as well as for most munitions production, should be discussed in more detail.

Steel production of the entire Soviet bloc in 1959 amounted to almost 80 million metric tons. Of this the USSR accounted for 60 million tons and the Eastern European satellites for 20 million. Chinese production is not considered here although recent reports indicate that about 10 million tons were produced.

In 1940, before the USSR entered the war, she was producing 18 million tons of steel. As a result of the Ger-

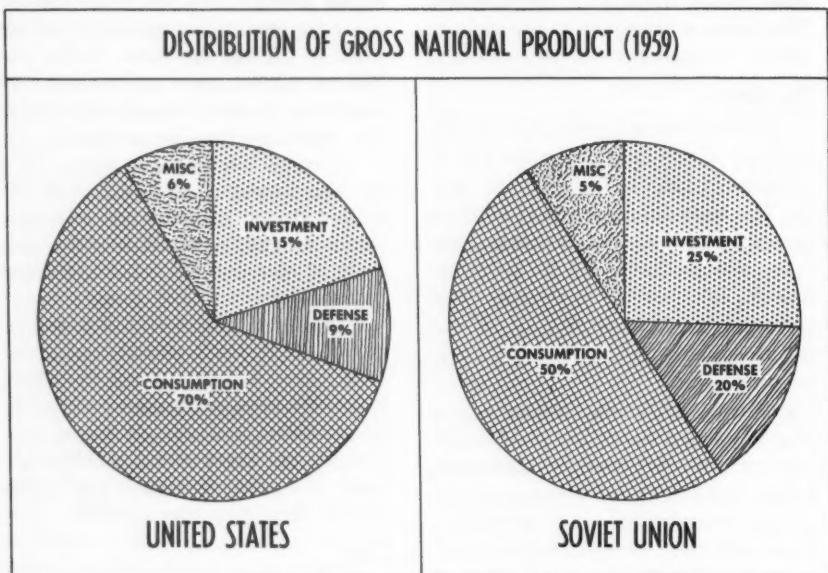
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man invasion only nine million tons were produced each year in 1943 and 1944. Of this annual output, about six million tons were devoted to direct military production, including production of 30,000 tanks and 80,000 pieces of artillery per year. We were then pouring tremendous quantities of steel in the form of trucks and weapons

and Japan with only five million tons. After all, one million tons of steel can turn out 25,000 tanks—more than our entire Army and Marine Corps possess today.

Petroleum

If the Soviet bloc has any real vulnerability in supplying its armed forces in the event of war tomorrow,



into the USSR; nevertheless, these figures show the relatively small amount of steel the Soviets needed for military production. As a matter of comparison, we produced 20 million tons of ships during World War II, and in 1944 our military requirements for steel alone totaled 27 million tons.

The experience of Germany and Japan in World War II reveals that steel production, although low by United States standards, was not a limiting factor in armament production. Germany fought the war with an average annual production of 20 million tons,

it is probably petroleum, especially jet fuel. That is one reason the Soviets want Middle East oil—to guarantee a continuous supply if their fields are destroyed. However, the Soviet Union now has access to over 143 million tons of petroleum per year including Eastern European satellite production. Significantly, this represents an increase of 80 percent in the last four years and current Soviet petroleum exports, while limited, may indicate that they have largely solved this problem.

At the start of World War II the

Soviets were producing only 31 million tons of petroleum annually; less than a third the present amount. Production fell to 17 million tons during the height of World War II but was almost enough to meet their wartime needs. Increased mechanization of the army and more aircraft have stepped up current Soviet war requirements. Meanwhile petroleum production is one of their fastest growing industries and has more than kept pace with their needs.

The possible loss of Middle East oil, threatened by the unrest in the Arab world and the vulnerability of the Suez and the pipelines through Syria, is the most critical danger to the peacetime or wartime economy of the Free World today. Whoever controls the oil of the Middle East, controls the economy and hence the industrial and political complex of Western Europe. The flow of oil from Africa will materially affect this situation by 1970. However, while the scene is shifting, whoever controls the area within a thousand-mile radius of Cairo today can control most of the Eastern Hemisphere and vitally affect the future of the Western Hemisphere.

Labor and Economic Control

Now let us look at the status of another important ingredient of an economy—its labor force. Our industrial labor force is 20 percent larger than the Soviets, even though our total labor force is much less. The reason is that we have only six million persons employed in agriculture, whereas the USSR uses 48 million. While one Russian peasant supports five persons with his produce, one American farmer feeds 28 of us; we still have plenty to ship to other peo-

ples of the world and yet have some left over. By a similar comparison, it is apparent that American industry is still at least twice as efficient as industry in the USSR today.

So far, the comparison between our economy and the Soviets' appears extremely favorable to us. We produce more than they do, both on the farm and in the factory, with a smaller but more effective labor force. There are two danger signs, however. First, as mentioned, the economy of the USSR is growing at a faster rate than ours. A major reason for this is that the Soviet Government channels an inordinately large portion of its production effort into capital goods at the expense of consumer goods. The people of the Soviet Union and her satellites are denied food, clothing, and housing in order to produce more factory buildings and machine tools—the means of further industrial production. This might be termed "forced investment" nationwide, although the investment is not accomplished for Soviet individuals, but only for the state.

A second danger sign is that the USSR habitually devotes a greater percentage of her gross national product to armament than we do.

In 1959 the Soviets devoted more than 20 percent of their gross national product to their military establishment while we spent less than nine percent of ours for this purpose. The Soviets invested about 25 percent of their income in expansion while we invested only 15 percent. Consumer goods accounted for 70 percent of our gross national product but less than 50 percent of the Soviets' although they have more people and less income. It is hard to compare the price

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structures, but while shoes cost more in the USSR, tanks cost more here. In the USSR a tank costs 2,000 pairs of shoes, but in the US a tank costs at least 10,000 pairs of comparable quality. Such variations in the price structure make any direct comparisons most difficult.

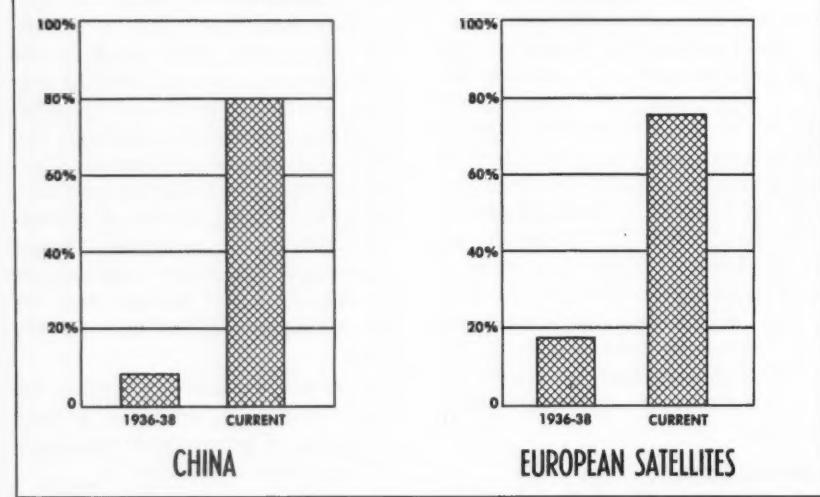
Economic Growth Rates

The industrial output of each country reflects the political and economic conditions existing at various times.

the czar to advance the tenets of Marxism.

For the period of World War I through the revolution, there is a lack of information for any particular year. Production dropped to a negligible amount during this period. The period of 1921-27 shows a high Soviet growth rate, which is deceptive in that it started from nothing and consisted of putting war-damaged facilities back into operation. From

PERCENTAGE OF TOTAL TRADE WITH BLOC



United States industry has grown at a rather steady rate with short-term upward surges occasioned by war or booms and short-term depressions, which in the case of the 1929-32 depression was severe.

In Russia substantial industrial progress was made in the period between 1890 and World War I. This period gave rise to the industrial proletariat—a class of workers which the Bolsheviks roused in revolt against

1928, when the First Five-Year Plan went into effect, real accomplishment was attained with an average annual growth rate of 11 percent until 1940.

The Nazi invasion in 1941 caused a setback, for much of the producing area was overrun. Production during the period 1944-46 was affected by the difficulties of reconversion and relocation of industries although the steel industry and some other basic industries actually raised their production.

However, from 1948 to 1955 production regained its high prewar average annual growth rate of 11 percent with a tapering off toward the end of the period. It is believed that this high growth rate will level off at eight percent to nine percent annually during the coming years, but the rate of industrial growth will probably continue to be double that of the United States. Even in periods of high prosperity, our growth rate seldom approaches five percent and is much less now.

At these comparative rates, say four percent compared to eight percent, the USSR could match the United States in industrial production by 1990, or at least by the turn of the century. Even before this time the USSR would be greatly outspending the United States for defense in dollar volume alone. This is only 30 to 40 years in the future, not too long a time to plan ahead when you consider that even an office building is planned for a life expectancy of 30 to 40 years. It seems to me to be completely unforgivable if we fail to plan ahead for a similar period in our national future, or if we lack the foresight and initiative to take dynamic measures to ensure our security and the advancement of our way of life.

Comparison of the Soviet economy with ours must include also a study of access to the world's markets and to the raw materials which feed production. Although the United States contains within her continental boundaries an abundance of certain natural resources, she lacks, either entirely or in part, current industrial needs. Examples are manganese, tin, chromite, bauxite, mica, rubber, cobalt, and niobium.

On the other hand, the Soviets are

self-sufficient in most raw materials needed by modern industry. Moreover, the Soviet bloc includes vast stretches of comparatively or completely unexplored territory which will undoubtedly yield untold wealth in coal, iron, oil, and other minerals yet untapped. The United States has been explored to a much greater extent, and it is doubtful if we possess natural resources in substantial excess of those already discovered.

Military Investment

Since World War II the Soviets have allocated about one-fifth of their gross national product to military purposes. About one-half of this expenditure has consisted of military hardware. By contrast our military expenditures before the Korean War accounted for only four percent of our gross national product, but only about one-quarter of that (or one percent) went for the production of war materiel.

Since 1951 the United States military expenditures have increased substantially, narrowing the gap between the US and the USSR, but our high unit costs in labor and materials still leave us far behind in total output. It is probable that the Soviets are expending as high a percentage of their gross national product today for military research, development, and production as we are for our entire military budget.

Contrary to a belief entertained by some that Soviet weapons are inferior in quality, the excellent weapons with which the Soviet Army is now equipped are modern, rugged, dependable, and effective. By our standards some aspects of their weapons, such as rough outside finishes and lack of crew comfort, appear crude. But these

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features are compensated for by emphasis on more important characteristics such as firepower, ruggedness, armor protection, mobility, and ease of production, operation, and maintenance.

Clearly, the advanced design and obvious quality of their latest hardware reflect the high scientific and technological levels which the Soviet economy has reached. Soviet achievements in launching *Sputniks I, II, and III* and their moon probes also lend credence to the Soviet announcement made on 26 August 1957: "A super long-distance intercontinental multistage ballistic rocket was launched a few days ago. . . . The results obtained showed that it is possible to direct rockets into any part of the world." Imagine the missile progress they have made since that time.

The Soviets have also made real advances in producing nuclear and thermonuclear weapons. Although the USSR has announced only nine tests of such weapons since 1949, she has actually conducted at least 55 tests to our knowledge. Yields of weapons employed have ranged from a few kilotons to several megatons.

Responsible for these advances are an ever-growing number of competent Soviet scientists, engineers, and technicians, the excellence of US technical publications which they translate promptly, and the acquisition of additional knowledge through espionage and subversion which should not be discounted. The Soviet Academy of Sciences, reactivated by Lenin in 1918, maintains over-all coordination of all such effort. The research performed by these scientists provides leaven for the Soviet economy, giving

rise to new breakthroughs. In fact, the decisive phase of competition between the American and the Soviet economies may well be taking place in the classroom and the laboratory rather than on the production line.

Internal and External Trade

Trade among members of the Communist bloc has snowballed within the last two decades. In the period 1936-38 the European satellites and China conducted a very small proportion of their trade with other members of the Soviet bloc. This picture has changed drastically today.

The Eastern European satellites now conduct 75 percent of their external trade with Communist bloc members, and China does 80 percent of her trade with Red nations, with only a dribble to non-Communist nations.

The question of the degree of actual Soviet control over China's economy—as well as Soviet political control of China—is a subject of much dispute among experts. However, the two nations can be expected for a time to provide a common economic front against the Free World as they do in the political and ideological fields. If further intrusion into the Free World is prevented, however, the future fate of this alliance is highly problematical.

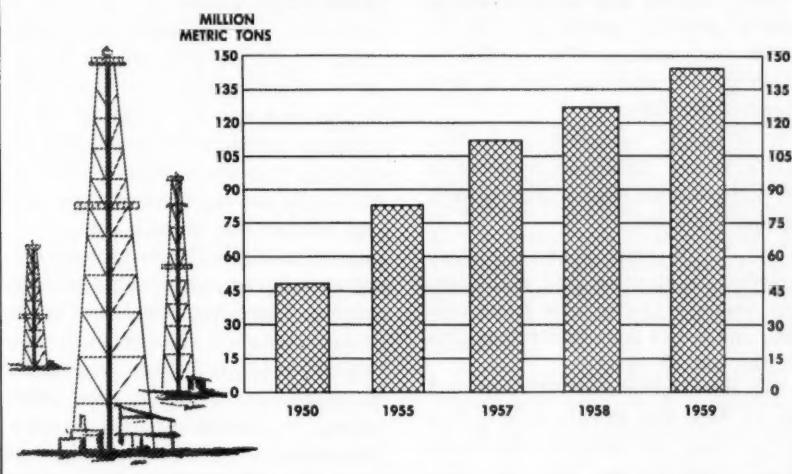
The relationship between the USSR and the Eastern European satellites is clearer—as the Hungarian revolt forcibly demonstrated. The USSR dominates these satellites economically as well as politically and has integrated their economies into her own. For this reason the contribution made to the Soviet economy by the addition of the Eastern European satellites is particularly pertinent to any analysis

of the USSR's economic strength.

It is estimated that the satellite economies combined equal about one-third that of the Soviet Union and, by order, they are complementary to it. It is noteworthy, however, that during the last three years the rate of growth of production of the five basic commodities—coal, electric power, steel, petroleum, and aluminum—has been less in the satellites

mitted and economically underdeveloped nations of the world with real or fancied economic assistance. As of December 1959 the Soviets had extended 3.2 billion dollars worth of credit to these nations. Of this sum about 800 million dollars was for military equipment—315 million dollars for Egypt, 130 million dollars for Syria, and the balance for Afghanistan, Indonesia, and Yemen. Trade also has

SOVIET BLOC CRUDE PETROLEUM PRODUCTION



than in the USSR herself. It is quite likely that disruptions in satellite economies, caused by resistance to Soviet economic policy—rather than by the institution of policies best suited to the satellites' economic health—account for this. We must never forget that Hungary and Poland are yet to be heard from with respect to this type of production.

Soviet Economic Strategy

Meanwhile, the USSR steadily increases her efforts to woo the uncom-

increased markedly between the Soviet bloc and the underdeveloped countries. In 1959 this trade was more than 50 percent greater than in 1957.

Recent congressional testimony before the Joint Economic Committee emphasizes this point of control over a command economy. It was reported that:

While there may be economic motivation underlying the expansion of Soviet trade, it is undoubtedly entwined with political considerations.

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Centralized control makes trade more readily subject to manipulation. Friends can be rewarded and enemies punished by shifts in the trade pattern. The Soviet Union has demonstrated that it can turn trade on (Iceland, Burma, Egypt) or off (Israel, Yugoslavia, Japan) at the spur of the moment. One can fear that this increase in the Soviet capabilities has created a greater capacity to disrupt world markets, as happened recently in the case of tin and a few other incidents.

Such controls and such pressures form a carefully planned part of the Soviet total strategy. The portion in which we are interested here is their economic strategy.

It is hardly necessary to explain that a strong American economy is the indispensable Free World bulwark against communism.

The USSR aims at an economic growth rate of more than eight percent annually in her new seven-year plan, and it has done better than this for the last 10 years.

The most optimistic estimates call for an American growth rate of five percent over the next few years; in recent years it has been less than three percent. The main point is that the Russians—and the Chinese also—are working harder than we are, and are devoting a far larger proportion of their output to purposes of national strength. I believe it is indispensable to our economy that we increase our growth rate to upward of five percent so that the needs of an increasing urbanized population are met and an adequate national defense can be provided.

Another area about which we should be mindful is the enormous impor-

tance of preserving and protecting one of our greatest American possessions—our system of private capital and free competitive enterprise. I can add little to what is already known about the advantage we possess in having a ~~almost~~ innumerable decentralized points of investment, competition, initiative, and decision—with literally millions of management teams constantly competing for greater efficiency and for the good will and patronage of the customer.

But I do know this: The dynamic, kaleidoscopic quality of our kind of capitalism—free competitive enterprise—if we are bold enough to preserve and extend it, cannot be matched in the long run by a system which delegates exclusive responsibility for creative, progressive thinking and execution to one management team for each product line. What is almost completely lacking in the Soviet system is entrepreneurial opportunity and incentive. There being but one entrepreneur, the state, the urge and opportunity for the individual to venture, to invest, or to create new enterprises, is almost entirely lacking. Therefore, we must maintain and strengthen the system of incentives—worker incentives, manager incentives, and entrepreneurial incentives—which has given us ascendancy in the past over any other nation on this earth.

Our Foreign Economic Problems

As our population grows and our natural resources become depleted, we are becoming increasingly dependent on foreign trade, including imports of raw materials. What is more, our continued growth may not be possible unless it is matched by similar ad-

vances in the remainder of the Free World.

Our general policy should seek to create the kind of healthy world economy into which the strong European Common Market and similar proposed regional undertakings can fit and grow toward freer trade.

We should give needed assistance, accomplished by thoughtful counsel, to the underdeveloped countries and their two billion people. These people—diseased, undernourished, illiterate, impoverished, and in many cases living in overpopulated areas—are not going to stay as they are, but are going to change and change rapidly. These areas of the Middle East, Latin America, Asia, and Africa share a common awareness of their problems and a passionate conviction that they can offset the great divergence between their living standards and those of the West. This must be done progressively if peace and stability are to come to this shrinking world of ours.

Our first objective must be to keep these critical areas free and friendly. Of course, we have strong economic interests in these areas, not unrelated to our defense potential, as well as humanitarian ties. But without our material assistance, they will be tempted to resort to the totalitarian method of development, aided by Communist exploitation of their plight.

It is desirable that our assistance efforts maintain the high morale and noble sentiments inspired by the Point Four Program at home and abroad. Through the intrinsic nature of our values and institutions, we have a potentially decisive advantage over the Communists, if we have the wisdom to perpetuate it. Such wisdom

would dictate the distribution of more of our surplus food stocks where needed, for instance.

Much of the answer to the Soviet Union's challenge is to be found in bolstering our own economy and that of our allies by encouraging a high level of multilateral trade and Free World cooperation rather than by relying on embargoes.

Our decisions should promote a broad framework of multilateral cooperation whether we are formulating our attitude toward Europe's Common Market, extending technical assistance to Southeast Asia, disposing of surplus wheat, or fixing the tariff on Japanese textiles. This implies a recognition on our part that we can only continue to grow and prosper and maintain our strength relative to the USSR if the remainder of the Free World is also strong. The challenge to subordinate selfishness to the common good is the greatest challenge that has yet faced Western civilization.

Such a positive policy is possible of achievement only if it is supported by broad public understanding. Moreover, we must be sensible enough about our long-run welfare to make the necessary short-term adjustments and to pay the necessary bills.

Our aim cannot be coexistence, and it cannot be containment, as it is doubtful if either of these policies can succeed and both are negative in nature. The march of history is marked by the tombstones of nations who sought to maintain the *status quo*. America and the Free World must advance. There is a new era and a new century approaching. It will belong to those who dare—not to those who don't.

Mr. Charles Nutter:

THE USSR'S ECONOMIC WARNING

IT IS estimated that around 15,000 Americans visited the Soviet Union in 1960. This number may be even greater when the final count is taken.

Based on a week or perhaps a month or two hitting the tourist spots in the USSR, they have come home with a curious confusion of impressions which they will pass along from amateur lecture platforms all over America.

Get ready to hear these scarcely new facts about the Soviet Union: There are some churches open, but not many; antireligious museums are hard to enter; posted prices on food-stuffs and clothing are sky high; there are very few automobiles and many pedestrians; lots of new housing is being built; Russian kids like gum and know a little English; women work at everything including day labor; hotels are adequate, but not luxurious; and photographic restrictions seem to have disappeared.

Now and then some traveler will regale his listeners with an exciting story, mostly imaginary, of difficulty with the police, losing his passport, or another spicy account of hidden dangers he faced and mastered there beyond Minsk.

These bits of chitchat will be passed along to Americans who have not seen the Soviet Union. They would be harmless enough if the visitors' accounts stopped there, or if they dug deeper into the real meaning of the Soviet

Union and Communist International which you don't see from a hotel window or taxicab.

Unfortunately, many otherwise astute observers return with a belief that, because of its frontier appearance, high prices, scarcities, and lack of luxuries, this is a backward nation, and that it is no economic threat to the United States because it has several generations to go before it catches up with capitalism.

The Soviet experiment, now 44 years old, is so vast, so different, so

Mr. Charles Nutter is a distinguished journalist whose public service has led him through positions of progressively greater responsibility as a reporter and editorial staff member of several major United States newspapers, as a representative of the Associated Press in major cities within the US and abroad including Mexico City, Madrid, London, and Moscow, and as a member of the administrative staff of the House Foreign Trade subcommittee. He is currently the managing director of International House in New Orleans, Louisiana. This article is an adaptation of a speech delivered by Mr. Nutter in New Orleans on 15 June 1960.

thought-provoking, and so startlingly successful at last that the Kremlin feels no fear in letting in large numbers of Americans to see its country.

It openly boasts of its economic plans for us all in the full belief that we cannot comprehend the facts and the danger.

A Specific Threat

More than a year ago Nikita Khrushchev told us over television that our grandchildren would live under socialism (a sugar-coated word for communism), and he further stated that:

We declare war upon you in the peaceful field of trade. We declare war and we will win over the United States. The threat to the United States is not the ICBM, but in the field of peaceful production. We are relentless in this and it will prove the superiority of our system.

Adolf Hitler in his celebrated book, *Mein Kampf*, never was more specific in the plans he had for the world than the Communists are and have been for the century since Karl Marx dreamed in the British Museum in London. So long as these plans were just dreams we could afford to pay little attention; now they are dreams backed by a billion captive people who have become, against their will, economic serfs under an industrial empire which would engulf the world.

In 1936-37, at the height of the great purges, I was a foreign correspondent in the USSR and saw Russia beginning to emerge from agricultural serfdom into an industrial state. Today, despite a great and disastrous war, the transition is far advanced, and the industrial power of the country is beginning to menace the world.

The visit to the Soviet Union left me with the definite belief that there is a very real Soviet economic threat. The Communists, by dint of clever

planning, hard work, and the virtual slave or forced labor of their entire populace, have created an industrial power second only to the United States. In full view of the world but without its realization or alarm, the Kremlin has adapted outlawed and outdated malpractices of capitalism to establish a supreme state monopoly under state capitalism. It is called communism.

The fruits of a labor force which is larger than in the United States and which is surprisingly efficient in many areas and fields do not go to improve or help the people; they go into a gigantic fund for use of the Kremlin—ample financing indeed for world revolution.

State Monopoly

Communism in the Soviet Union is not communism at all and probably never was. Today, the Soviet Union is one gigantic trust in which the people have been exploited beyond the wildest dreams of capitalism in this or any other country. Everything and everybody belong to the state and move and operate at the whim of the state. The state owns every job and every means of making a living, and it owns every living area, every bit of production, all land and factories, and resources, developed and unexploited.

The state fixes wages and salaries and controls the cost of living. It can raise or lower either overnight, closing or widening the gap without consultation or law, for some 210 million people. It does so, of course, by holding wages down and raising living costs, particularly clothing or food, so that a whole family, including the wife and mother, has to work to make ends meet.

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It looked to me as if the Soviet system, economically speaking, is a colossal distortion of the Company, the Company town, and the Company store, as we used to know them in the United States. The profits of this great, all-embracing, nationwide monopoly do not reach the people; they are used instead by the state for national and international political purposes—ample financing indeed for the plans for worldwide conquest which communism espouses.

It is necessary to know and remember that profits and the profit motive have not disappeared in the USSR. The government has taken them over and given them new names that are deceptive and misleading.

Profit is a dirty capitalistic word in Moscow, something reserved for blasting the capitalistic world. Capitalism also is a dirty word, reserved for enemies of the Soviet Union. Yet there is a degree of capitalism in the Soviet Union today that surpasses anything in the Free World.

The difference is that under state capitalism, Kremlin style, profits are not distributed to many private owners; the profits go to the sole owner of everything—the state. This is by no means the workers' paradise, for the worker has nothing whatever to say about what goes on.

Controlled Consumption

The high prices which we saw quoted in good stores in Moscow and Leningrad are not necessary or realistic. They are, instead, a subtle form of taxation to drain off any surplus a worker might accumulate. In a monopolistic economic state, prices are not geared to cost but are fixed by political decisions taken in the Krem-

lin. Shoes need not cost several weeks' salary, for they could be sold for a day's salary or issued free, if desired. But this might leave the individual with cash in hand which the state dislikes. Private accumulation is the first step toward private capitalism.

The worker is left drained dry at all times. He must exert his maximum effort to make ends meet. This effort, multiplied a hundred million times, goes to enrich the parent corporation, which uses the labor force's productivity for capital expenditures and goods, for propaganda, for sabotage, espionage, and subversion, for education, for military preparation and adventures, for *Sputniks* and *Luniks*, for training of Communists to work in other countries all over the world, and for any other purpose it sees fit.

Better housing, food, and clothing for the proletariat come into this scale at whatever level the leader decides, usually near the tail end. However, it is correct to say that food and living conditions are improving and are vastly better than they were in the thirties.

The important thing also to remember about Soviet economics is that despite 10 million slogans and claims to the contrary, the workers or proletariat have nothing whatever to say about what goes on; they are as voiceless as slaves because there is no way they can make their voices felt or heard.

The proletariat does not control; it complies. There are no real unions, no strikes, no sitdowns, slowdowns, or complaints—nothing but obedience or disaster. The world's greatest private corporations never approached this system in power or in numbers of workers. The Soviet Union has

complete and absolute mastery over a work force of more than 100 million workers. Here is a dictatorship of state capitalism, big business beyond the wildest dreams of the hated trusts which the Soviet press is always denouncing.

Behind the curtain and always ready for action against a sullen, unresponsive, or troublesome worker is compulsion. He might lose his work card, or his assigned room to live in, or he might be ordered to a new job thousands of miles distant. Finally, there are the secret police and terror. The Soviets have killed more people for economic reasons in trying to uproot humanity and change its habits than they lost in World War II.

Under Secretary of State Dillon, wise to the ways of the Soviets, recently said that:

In the thirties the Communists procured foreign capital equipment by exporting grain at prices below an already depressed world market—despite the fact that millions of Russians and Ukrainian peasants were dying of starvation.

The graves of tens of millions of workers in the so-called workers' paradise are the foundation for present industrial successes, and more will suffer and die as necessary to build this success higher.

This is the face of the enemy and the economic war in which we find ourselves. No day passes in the USSR, or presumably in China, without millions of printed words exhorting greater production, greater efforts, and greater sacrifices so that capitalism and, particularly, the United States may be surpassed and destroyed.

Up From Nothing

After more than 40 years big business is working well in the USSR. The people who make it possible, albeit perhaps reluctantly, are not unhappy actually for they are better off than they have been before and feel that their lot and living conditions have improved. This is the important thing always to remember about the USSR; not that the people are not as well off as we are, but that they are better off than at any time previously. Things are improving for them and they are satisfied with this.

They really do not know of better things in the world. Ninety percent of the present population grew up under so-called socialism or bolshevism, know little of the outside world, and are victims of and believe in the Soviet's clever, well-planned, monopolistic, and universal propaganda.

No longer is it useful to dream that in educating the people the Kremlin will create a Frankenstein to rise and destroy the master. The Soviets have sold the people on the system and the alleged danger and threat from the outside, and particularly the United States. It is safe to say that the Russian people, naturally friendly and broadminded, have been taught to fear and distrust the United States. They believe that the United States is a grave threat to the peace of the world, and that she would destroy the Soviet Union if possible.

Absurd as this may seem to Americans, it loses its absurdity and becomes a menacing fact when it is realized that this is a genuine fear held deeply in the hearts of people who lost 20 million dead and saw a third of their country laid waste only a generation ago.

ECONOMIC WARNING

Summarizing a little on this phase the sad fact for us is that the average Russian may not be very well off by our standards, but he doesn't know it and he thinks he is doing better by his standards. And he has actually been taught to believe that America endangers his country's frontiers and he must work and sacrifice to protect them.

Imperialistic Objectives

The average Russian also has no idea of the extent of subversion and meddling in world affairs engaged in by the Kremlin, nor of the seriousness of the Communist International plans for world conquest. He is, in other words, providing the sinews and the financing for world conquest without knowing that this is the master plan of Communist planners.

The USSR has always been imperialistic but the Russian people are not conquest minded. However, this makes no difference because their views have not been asked nor will they be; here again they are the foils of communism, and they obey.

Meanwhile we are confronted with an inexorable desire by the heads of the Communist International for taking over the world. The important aspect of Soviet foreign economic policies which must never be forgotten is their determination and drive to penetrate and eventually capture the newly developing countries of Asia, Africa, and Latin America through trade and aid techniques. Economic warfare was developed and is thoroughly understood by the Soviet Union; to us it is largely a nuisance remembered from World War II.

Khrushchev has told us openly and repeatedly that the Communists shall fill the needs of backward peoples bet-

ter than the Americans and, consequently, shall win their minds, control of their lands, their resources, and themselves. We do not seem to understand such language. We understood Pearl Harbor and we finally understood Hitler's Nazi Germany; but we do not seem to gather any alarm from a more determined, more resourceful, better financed and better planned threat from communism.

Under Secretary Dillon once said that:

In their offensive economic weapons have been cleverly blended with military assistance, propaganda and diplomatic moves, to inflame local passions and to create and aggravate situations of crisis. The long-range aim is to create climates and attitudes in the newly emerging areas conducive to eventual Communist takeover.

If Soviet penetration, economic subversion, or trade succeed in extending Communist rule in Asia, Africa, the Near East, and Latin America, the cost to the Kremlin is nothing compared to the results. Police power will be used to hold the people in line and to hold control over immense wealth in the world's vital minerals.

Recognition of the Threat

Americans have been reluctant to grasp the awful significance of Soviet totalitarian plans, design, and action. We would rather relax and enjoy an economy that could be toppled by Soviet plans. We cannot or rather we have not understood that human beings can think, act, and work from a set of motives and reasons completely the reverse of our own.

Last year President Eisenhower told the Congress in his State of the Union speech that:

We have learned the bitter lesson that international agreements, historically considered by us as sacred, are disregarded in Communist doctrine and in practice as mere scraps of paper. . . . The demonstrated disregard of the Communists of their own pledges is one of the greatest obstacles to success in substituting the rule of law for rule by force.

There can be no doubt that the Communists live by the law of the jungle; stealing, lying, killing, and destroying are virtues when done for the state. They dishonor their own word; their firmest commitments are meaningless. Yet this is the movement that teaches that the USSR keeps her pledges but the United States does not; that Soviets want peace and we want war; and that all powers are warmongers except the Communist powers.

For almost 40 years the Soviets have been training nationals of every country in the world in revolutionary tactics—how to destroy and create chaos and how to inflame and arouse peoples against their rulers and leaders. They also have been dumping trade goods into desired areas of the world at giveaway or at extremely low prices. They know how to attack America's export market by dumping of their own goods. And they have the will to do this when they see fit. They also have the financial ability, thanks to very long and successful planning.

The industrial output of the Soviet Union today is very impressive and is very menacing. Factories still are not as neat, well-built, and imposing as American factories but in many cases they are as productive; the Soviet workman has become a skilled workman. His productivity can and does

rise as high as the American workman. Need is sparked by fear to drive him ever forward.

Propaganda for Export

When we were in Europe Premier Khrushchev announced abolition of income taxes in the Soviet Union over a five-year period, starting in 1961. He made much of the fact that they could abolish income taxes while the United States very largely lived on such taxes. Here is distortion and misrepresentation that takes keen analysis. The Kremlin can in fact abolish all income taxes without losing a single ruble of revenue; it shifts the emphasis to higher priced consumer goods or rents and collects just as much as ever. But in the remote areas of the world the Soviets can brag to an unsophisticated people that they alone can live without income taxes; "bane of the capitalistic world." The Soviet Premier said:

The abolition of taxes on workers and employees in our country is an impressive social gain for the peoples. One cannot speak of it without pride and emotion. This is an enormous gain, dear friends!

Look at what is happening in the capitalist countries, where taxes are perpetually rising, unemployment reigns and prices are spiraling upwards. The insecurity of the working people lies like a heavy weight on the masses. . . .

When people all over the world see that the living standard in the Soviet Union is regularly improving, that wages and pension benefits are rising, that taxation is being abolished and that the network of free medical, cultural and welfare facilities is expanding, they come to the clear realization



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Soviet factories are not as neat and impressive as those in the United States but they are often as productive

that socialism is solving the most urgent problems and is showing the right way to get rid of exploitation, unemployment and poverty.

This kind of talk is for the export trade, not for home consumption since Khrushchev doesn't really care a fig for public opinion at home—that is already captive. He is trying to influence public opinion in the noncommitted countries.

This is "black is white, white is black" at its pinnacle. But this is not the picture the American tourist will bring home. This is the reason that it is dangerous to accept at face value the impressions of tourists traveling in the Soviet Union and the reason that permitting more Americans to travel there is in reality part of the

master plan to confuse and confound the world.

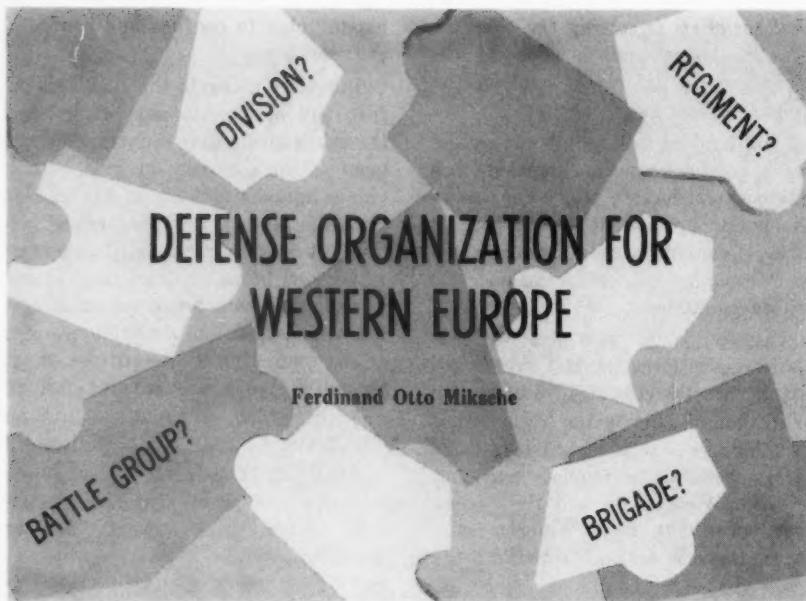
Travelers going to the USSR therefore will not necessarily bring home the truth about that country. She has been called a puzzle, enigma, and a riddle but she is none of these. Her purposes and plans are well-advertised. It is of course difficult to understand how human beings can become so dedicated to a cruel, inhuman system which feeds on destruction—even of its own architects—but we must recognize there are several million such dedicated Communists in the USSR and China.

Our job is to take the economic offensive and prove that the capitalistic system is a superior one to theirs.

The Communist challenge to the free world is self-evident. We must provide the alternative to the path toward communism. We must accelerate our domestic economic growth and thereby convincingly deflate Soviet propaganda that communism represents the 'wave of the future.' In so doing, we will demonstrate to the peoples of the newly developing nations that their aspirations can best be attained in a free society. We must continue to take a prominent part in facilitating the expansion of world trade. We must work strenuously and unceasingly to find practical solutions to the problems that beset them as a result of price fluctuations in their raw material exports. And, finally, we must continue our financial and technical aid.

This is a formidable and urgent challenge. But in a world where freedom is jeopardized, we cannot ignore or minimize it. We should constantly remind ourselves of the contrast between our own prosperity and the poverty gripping so much of the world. Sacrifice, energy, stamina, perseverance, and courage will be necessary. I do not magnify the importance and dimensions of the struggle in which we are engaged. I am confident that we will respond successfully to this challenge.

Secretary of State Christian A. Herter



Ferdinand Otto Miksche

MILITARY REVIEW herewith presents a European view of NATO's combat organization shortcomings, its overreliance on nuclear weapons, and a broad proposal on which to reorganize the forces. Although United States problems are not limited to the defense of Western Europe, ultimate solutions must consider both the European and American viewpoints.—Editor.

THE North Atlantic Treaty Organization is an inflexible alliance because it provides protection only against an improbable Soviet attack on Western Europe or North America. The parties to the agreement cannot accommodate themselves to react in concert to the full spectrum of possible or even likely contingencies geographically. It is politically rigid because it is based lopsidedly on a nuclear deterrent. The basis for invoking the col-

lective power of the members is so absolute that it offers no resiliency or middle ground from which to parry changing Soviet threats and thrusts.

The West's current political passivity may be attributed to its lack of conventional forces in sufficient strength. A power which relies too one-sidedly on nuclear weapons is faced with the dilemma either of using them totally or of giving in. Who would think of knocking a fly off his own head with a hammer?

The Soviet Union fears nuclear war as greatly as the West but her massive conventional forces give her immeasurably more room to underpin her policy. No matter how mobile the defense of Europe might be conceived by Western military planners, the political rigidity of the Atlantic Pact remains unchanged. For economic reasons the number of mechanized forces can never be adequate to impress Moscow. By what means can we

form a military organization which is capable of tackling the real military problems of this world, and not rely on technical fantasies?

Most people conceive the defense of Europe along a line—the Iron Curtain—which, in the case of Soviet aggression, must be held. Now our fate will not be decided here at all, but between the Persian Gulf and the Atlantic coast of Morocco, mainly in Africa. Moscow is scarcely contemplating a direct attack on the Western World, but is attempting to bring about the collapse of Europe by economic and subversive means. Communism, which has lost its impetus and has grown old in the countries of its origin, is finding new vitality among the colored races. This force, today more dynamic than communism itself, exerts a boundless emotional energy which threatens to crush us. Moscow will try unceasingly to harness this power for its own interests while representing the Western Nations as exploiters of colored peoples. Hence we need military protection for political and economic positions which lie more outside Europe than in it.

Adequate Conventional Forces

Nevertheless, an adequate defense along the Iron Curtain is essential for victory in this struggle. If it is lacking, then the pressure here exerted by the Soviets will force the West into local conflicts leading to one conces-

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sion after another. This arises from the repercussions between what happens inside and outside Europe.

A military system based preponderantly on nuclear weapons is an unsuitable means of calculated political move or pressure. The larger a nation's conventional forces, the smaller is its dependence on nuclear weapons; the weaker its conventional forces, the greater is the danger of nuclear war. Any nation which does not have adequate conventional forces is not able to act or negotiate from a position of strength. This especially applies when the other side has both nuclear weapons and conventional forces in sufficient strength.

Since 1949 rearment has been debated again and again, but the basic program agreed on at the NATO Council meeting in Lisbon in 1952 never has been fulfilled. Was it not an error to commit ourselves to an armament policy which from a financial viewpoint alone hardly could be implemented? Forty-one divisions were planned for Western Europe, 24 on a full war footing and the remainder at 75 percent strength but capable of being brought up to 100 percent strength within a few days. These were supposed to be sufficient forces to defend the front between the Baltic and the Alps without resorting to nuclear weapons.

Overmechanization

Normally, the countries of Western Europe, including Italy, must maintain more than 60 to 80 standing divisions—a number which mobilization could double within two weeks. Their population and economic capacity make this reasonably possible to attain. What prevented the realization of the program was less the agreed number of forces than the form of

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organization, and in particular their *overmechanization*.

What happens when we overburden a military organization with too much machinery? The auxiliary services are out of balance with the fighting troops! In order to maintain one NATO type division of 18,887 men in the frontline, some 35,000 men are needed in the rear. The Soviet Union would form not one but nearly three divisions with the same money and manpower.

In case of war there would be at least two million trained men available in France alone. The hitch is that neither France nor any other European country can afford to arm all its men who are fit for service because a single division costs 220 to 280 million dollars and its annual maintenance about one-half that amount.

Such planning means that the West cannot militarily exploit all its manpower potential. No wonder that after more than 10 years of rearmament we have not succeeded in building up suitable conventional forces to counterbalance those of the Soviets'. If we had erected a simpler military organization, it would have permitted us to have come much nearer the aim.

Only a total nuclear war is conceivable with small armies. This most terrible of all dangers can be compensated only by augmenting our conventional fighting forces in being. In all types of warfare a numerically strong infantry remains indispensable. Even in the case of a total clash it would be of supreme importance to have such troops. Their task would not be wholly defense against invasion. Instead of fighting with rifles, guns, and tanks, they would assist partially the rescue work with spades, pick-axes, and bulldozers.

Progress in armaments techniques has influenced Western strategy too greatly. Strategy has lost contact with political development. Plainly, strategy is subordinate to policy. Realistic military planning must fit the technical factors into the existing political framework, and not vice versa.

Logical military planning should result in the creation of formations whose capabilities are compatible with both the conceived danger and the military requirement to meet that danger within a known economic environment. The structure of military units resembles complicated machinery; not only must the parts mesh with each other but they should stand in mutual equilibrium.

Tactical considerations such as the necessity to preserve the flexibility of units within the framework of their tasks further complicate planning. To satisfy all demands harmoniously is difficult; at best everything is relative. To gain advantages in certain areas we must tolerate reciprocal disadvantages in others.

Diversity of Equipment

Up to the end of the 18th century there was no organic tie between the infantry, cavalry, and artillery. Armies were assembled according to the possibilities and needs of a campaign. Carnot conceived the idea of creating mixed formations which made available all the weapons and services necessary for independent operations within certain limits. Thus arose the division as a basic operational unit. In Carnot's time, however, everything was much simpler than now.

Since then the number of arms has multiplied. The infantry has machine-guns, mortars, and antitank guns, to name only the most important. It must

be supported by artillery, the guns of which have varied ballistic characteristics, and by armor of various kinds. Like an artisan who needs sundry kinds of tools, an army today could not operate without a diversity of apparatus. Independent operation requires not merely the use of all these weapons but a high degree of maintenance to ensure their usefulness. The colossal requirements in supplies necessitate services and staffs on a scale heretofore unknown.

The division no longer can absorb harmoniously all the weapons and service elements allocated to it. Thus arises the imbalance between the combatant and noncombatant parts. The division's combatant elements are too light to cope with the operational demands which should be made of it. Apart from the fact that it is uneconomical, it is cumbersome. This makes it especially vulnerable under conditions of nuclear warfare.

The problem facing us no longer can be solved within the now too narrow confines of the division. Anyone who tries to do so will never get out

of the vicious circle in which military organization presently revolves. Instead of continuing to plan in divisions, would it not be more advantageous to raise the concept of the basic operational unit to the higher level of the army? Only within an expanded framework would it be possible to create smaller and tactically more flexible formations which are more economical and better balanced internally in relation to one another and to the services.

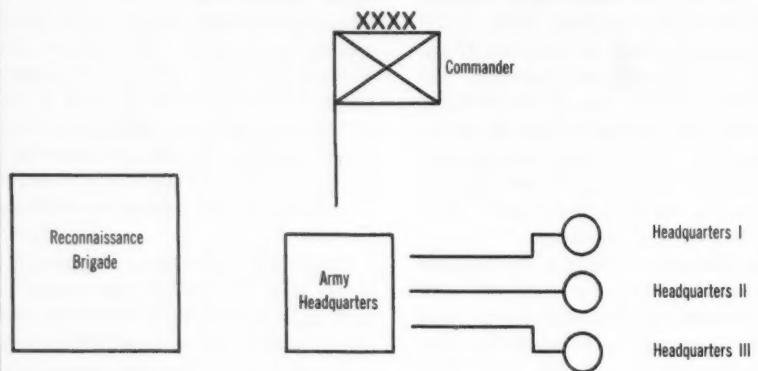
Imagine a Meccano set lying tidily in its box. It consists of numerous large and small pieces from which various models can be built. Similarly, when an army is the basic operational unit, its parts can be assembled according to the mission, situation, terrain, and possibilities. Naturally, its individual components must have a certain internal organic cohesion.

The following proposal for the redesignation of units could be called "alteration of the relative tactical value of units" by creating intermediate formations. Figure 1 will serve to illustrate the idea:

<i>Present Units</i>	<i>After Alteration of Tactical Value</i>
Platoon (46 men)	Platoon/Company (84 men)
Company (182 men)	Company/Battalion (403 men)
Regiment (3,147 men)	Brigade (6,434 men)
Division (18,887 men)	The reinforced brigade, according to circumstances (9,000 to 12,000 men)

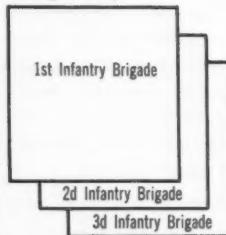
Figure 1.

THE INFANTRY ARMY (Summary Scheme)

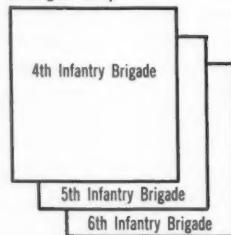


1) BASIC UNITS:

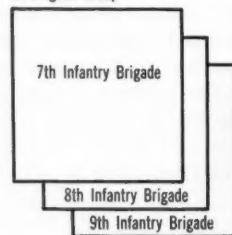
1st Brigade Group



2d Brigade Group



3d Brigade Group



2) COMPLEMENTARY UNITS:



3) SERVICES:

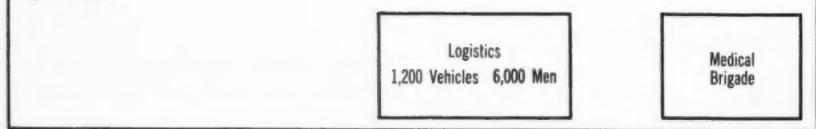


Figure 2.

The proposed platoon (largely equipped with antitank weapons) is almost twice the size of the present one, but smaller than the present company. It would replace the present company, the new company would replace the battalion, and the 1,700-man battalion becomes the regiment.

An army organized on such lines

regiments also is no longer used), and there would be one engineer battalion, a signal company, and one battalion of field artillery (18 guns)—everything together forming an organic whole comprising the means for undertaking *minimal assignments*. (Figure 3.) Such tasks would include the defense of sectors in mountain country, the

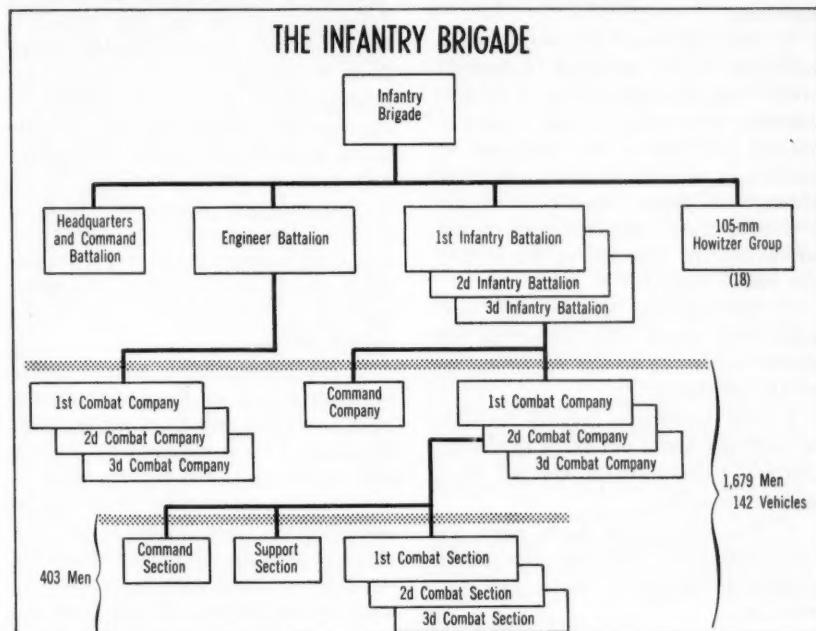


Figure 3.

would consist of basic units, complementary units, and services.

Basic Units

The basic units form the chief element of the army. (Figure 2.) They could comprise six to nine mixed infantry brigades of 6,500 men (the word division was deliberately avoided to prevent confusion with the former meaning). Each brigade would number three reinforced infantry battalions of about 1,700 men (the term

defense of positions covered by obstacles such as rivers or fortified zones, or guerrilla fighting.

Complementary Units

For operations of another type the brigades would have to be reinforced by complementary units. For this purpose the army command would have these units at its disposal:

1. One artillery brigade, consisting of one regiment of light and one of medium heavy field artillery, one reg-

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iment of 120-mm and 160-mm mortars, and one regiment of antitank guns. Because this brigade would not form a unit in the tactical sense (this applies to the other complementary units as well), but only a "*distributing depot*," the regiments could number five to eight battalions which would permit savings in staffs and services.

2. One brigade of tanks (not to be confused with armored brigades) which likewise numbers as a complementary unit three to four tank battalions and one to two batteries of assault guns (250 to 350 tanks), to strengthen those infantry brigades requiring their support in sectors that are suited for their use or where they are really needed.

3. One engineer brigade, the battalions of which also would be detached according to the requirements of the situation.

4. One transport brigade capable of carrying about one-third of the infantry brigades which are not completely motorized.

5. One signal brigade to maintain communications between the army command, the basic units, and the services.

Presently, divisions formed for large-scale mobile warfare are equipped for maximum "operations." This tempts commanders to use costly means even when tasks could be carried out more cheaply. Their only economical use is as battering rams at the focal points of the battles. In many other cases—particularly in defense—part of their organizational equipment is excessive, especially in tanks and means of transport. The methods proposed for the occasional strengthening of the basic units accordingly would be incomparably cheaper.

Services

Within the framework of the proposed army a uniform organization should be in charge of all supply. As far as possible this organization would deliver supplies directly to the smallest units. According to the situation, this supply organization would be the brigade in case of mobile fighting; in defense it would be the battalion. Such a solution would free the troops from a substantial part of noncombatants; allow the supply services, in the case of nuclear warfare, to disperse more easily within the wider sector of an army than they could if they belonged organically to divisions of the present type; make for better adjustment to the larger framework of airborne supplies; and make possible a more rational use of the vehicle parks.

In the comparatively narrow limits of a division it is frequently impossible to exploit vehicle capacity fully. The loss of time incurred by loading and unloading at the various levels is considerably more than if the goods were brought from farther in the rear straight into the forward area. What we are concerned with is, in essence, a system of delivery "direct from the wholesaler to the customer" without the intervention of the retailer. The capability of modern communications facilitates such a solution. At the various combat headquarters, liaison officers, using their own signal network, would report current needs to the central staff responsible for supplying the entire army.

There would be no need to raise the strength of Western armies in manpower or in armament; only to reorganize what is largely already available. In peacetime each army organized on these lines would number

only about 35,000 men (the infantry units one-fourth and the technical arms one-third of their war strength). They would be filled out by a militia callup. According to reliable estimates, a system of this type would save 25 to 35 percent of present costs. Even more important would be the *political advantage* that such a defense system would not inevitably compel the use of nuclear weapons. It would be more deterrent, therefore, than one depending entirely on these weapons.

On a full war footing the proposed army would number about 100,000 men plus 12,000 vehicles. It could defend a sector of about 60 to 80 miles, or carry out offensive operations with limited objectives on a breadth of 30 to 60 miles. Operationally, it would comprise three to five brigade groups (army corps) which, according to their tasks, seldom would be equal in strength and means. Additionally, armored corps (of about the strength of a present-day armored division) would stand in readiness for large-scale counterattacks. One could counter the possible objection that such an army would be too cumbersome by pointing out that the individual brigades (which correspond roughly to present-day divisions) would number, according to the extent of their reinforcements in armor or artillery, an average of 9,000 to 12,000 men and 800 to 1,200 vehicles. Thus they would be easier to control than the present ones, especially in a nuclear war.

Firepower and Mobility

To what extent large-scale mechanical warfare would be possible under nuclear fire could be revealed only by real experience, and scarcely by discussion however weighty the arguments are one way or the other. It is certain that it would be less risky

to reckon in advance with the eventuality that mobile operations could peter out under the force of circumstances, thus dissolving into chaos. At present, official planning counts on high mobility. The forms of battle, however, always have depended essentially on the reciprocal effects of the two basic elements of combat: fire-power and movement.

As long as one is compelled to operate in the battle area principally with tanks and lorries, it is difficult to imagine that one could win against nuclear projectiles transported by jet bombers—to say nothing of even faster ripostes with rockets. In any case, it is always simpler to disperse fighting units than the endless supply columns which cannot be caused to disappear magically off the roads. Despite the many wheels on which armies move nowadays, only the combat echelons are really mobile. Everything which follows is highly vulnerable. This has its inevitable consequences. It is difficult to see how divisions numbering 3,000 vehicles (one per four men), needing 500 tons of supply (this means 80 kilograms per vehicle and 38 kilograms per soldier/day), could move on a battlefield dominated by nuclear weapons.

According to all logic, operations would take one course or the other:

1. Disintegrate into innumerable individual actions difficult to coordinate and then degenerate into large-scale guerrilla warfare carried on with all kinds of weapons.

2. Halt in place, because digging in offers protection to a certain degree against nuclear weapons, thus saving to some extent units from disintegration.

The requirements both in organization and armament differ from those

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projected in present planning. A rifle in the hands of a sniper lurking in his hole, a machinegun in a concrete pillbox, or easily transportable mortars and antitank guns could prove more reliable than many costly arms. Under nuclear battle conditions the simplest things probably would turn out to be the only reliable ones. Mechanized troops would be indispensable, but their operation without adequately strong infantry is barely conceivable even when used in conjunction with tactical nuclear weapons.

Unless a continuous belt were set up, an attacker in widely extended battle order could infiltrate easily. Both sides inevitably would become interlocked and this would make the use of nuclear weapons hardly possible. Wide dispersal of mechanized troops is scarcely attainable without a cohesive element. It is difficult to understand the logic of those whose thesis is that the enemy must be maneuvered into concentration but who themselves want to operate in loose formations.

Passive Air Defense

Even in the event of total nuclear clash a numerically strong infantry remains indispensable. Such a conflict probably would be a duel for the hinterlands. All the same, it would be wrong to think that in this case general mobilization would be superfluous. The quantity of required manpower would not be altered, only *the form* in which it is employed. While small fighting forces might be adequate in forward areas, organizations numbering millions would be necessary in the rear to cope even halfway with the many tasks connected with passive air defense.

One could object that events would

occur so rapidly that general mobilization would be scarcely imaginable. This is by no means certain because the outbreak of hostilities is generally preceded by tensions lasting days or weeks. During this time it ought to be possible to place the hinterland in a state of alert. If mobilization proved to be impossible, a numerically strong standing army engaged in passive air defense would be the best guarantee of saving what could be saved.

The last war showed that the problems of passive air defense cannot be mastered by civilian organizations. If a nuclear war were to come, the consequent difficulties would be multiplied proportionally with the increase of the explosive power used. *Armies of the future—or part of them—must be organized for two operational possibilities—both as fighting and rescue troops.* Discipline, as it is known only in armies, would be required no less in coping with such tasks than in normal operations in battle areas—which is what the hinterland will become. Planning generally along staff lines would raise the performance of troops whose units are filled out by the civilian air raid defense, the fire brigades, and the police. Total nuclear war is, however, the least likely form of a conflict. Hence it would be a fatal error to plan one-sidedly for such an eventuality.

Conclusions

The proposals advanced in the foregoing paragraphs answer the question: How can it be done better and more cheaply? One can have different views concerning the details of the proposed organization but one thing is clear: We need more real soldiers and fewer skilled technicians—whatever the ability of the latter might be to shoot rockets to the moon. Such

skills can hardly be useful in solving the routine problems of our daily life and this is what interests us primarily. What we need is a military organization which is capable of tackling the real problems of this world, and not one relying on technical fantasies. As Protagoras said: "Man is the measure of all things."

True progress means freeing troops from the rigidity of an exaggerated materialism while bringing their effectiveness into line with our financial resources. In assessing the effects of modern technology on armed forces, different standards apply from those in the other aspects of life. The correct way lies in a cautious avoidance of extremes. To be more precise: a *politically* efficient defense system must be built not on nuclear weapons plus machines plus fighting men, but

on fighting men plus machines, both of which are *only covered* by nuclear weapons.

To cope with the real perils menacing us we require a military system which can adjust its countermeasures to each given situation. Overemphasis on nuclear armament reduces the chances of the West to deal with or to negotiate on actual problems. Only the West would have no other choice but to use nuclear armaments. This has become the dominating factor in world politics, with the result that we are forced from one retreat to another. We are engaged in a delaying battle, in a more rigid defense than was the Maginot Line, with no prospects of political offensive. Unless the West rebuilds its military system, it is difficult to see how it can change this position.

NEXT MONTH:

Lieutenant Colonel J. Perret-Gentil, French Army, Retired, discusses the pros and cons of divisions organized around three and five combat elements, with emphasis on United States, German, and Soviet organizations.

Colonel Slavko N. Bjelajac, United States Army Reserve, analyzes Soviet policy and doctrine of operation in underdeveloped areas.

Captain Clinton Granger establishes a modern frame of reference for understanding and enjoying Civil War action.



Arms Control and The Military Establishment

George A. Kelly

IT IS traditionally the task of the higher staffs of the American Armed Forces to prepare for the eventuality of war. A military leader who did not strive for the measures that most adequately guarantee the security of his country would be derelict to his constitutional oath and patriotic responsibility.

This means that he should desire and advocate a Military Establishment sufficiently potent, diversified, and sensitive to respond to any kind of emergency in which the national interest is threatened. He will necessarily favor the strategies, missions, and priorities of his own service, but he will not fail to judge the gravity of a situation in terms of the joint measures that are indicated.

Often, however, as a consequence of shortsighted budgetary arrangements and myopic views of organization and

corollary strategic tasks that have been imposed from above, his outlook becomes parochial. Within a system where there is much overlapping of service responsibilities serious contention is destined to arise in the areas of overlap.

I do not personally feel that the American defense organization of the present satisfactorily reflects the choice of strategies dictated by the demands of modern warfare. My purpose here is not, however, to enter this argument. It is to establish a background against which to present a more particular, but nonetheless urgent, appeal to those professional officers who have the inclination to think through some of the bewildering and paradoxical alternatives of military power in the sixties.

My premise is that the specifics and possible strategic effects of arms con-

tral measures bear directly on the way our Military Establishment must look at its tasks, its alternatives, and its composition of forces. In short, the military must develop its own specialists in this field of strategy; men who are not only equipped to live with the idea of weapons limitation, but can survey ensuing strategies, decide between them, and indeed make positive and original contributions to the science dealing with restraints on war.

Before proceeding, let us put aside the word "disarmament," which leaves such a bad taste in the mouths of many soldiers. What is intended is not some kind of system or solution directly attacking the foundations of legitimate armed response to intolerable provocation. Arms control is envisaged as a means of ordering military conditions between the two paramount power blocs—and, if possible, elsewhere in the world—to preclude the likelihood of disastrous consequences. Neither side favors such consequences but both sides might be powerless to prevent them in the absence of mutually acceptable safeguards.

Without a sincere and intelligent effort to negotiate these concerns with our adversary we appear doomed to the upward spiral of a technologically explosive arms race. The only clear result can be an increasing menace imposed on the defending force and a

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substantial premium for the side ruthless enough to deliver the first strike. If our proposals, made in conjunction with our North Atlantic allies, are succinct and we do not allow ourselves to be swayed from them by propaganda or superior Soviet negotiating tactics, we should not fear agreements that could contribute to mutual stability.

On the other hand, if our serious—and hopefully ambiguous—efforts to solve commonly vexatious problems are rebuffed or distorted in the interests of psychological warfare, this should clearly reveal that our opponents are uninterested in stability and do not regard it as a profitable area of discussion.

Separation of Strategy and Arms Control

First, let us make clear that even if this country is more advanced than the Soviet Union in attempting to correlate artificial limitations on warfare with possible strategies for fighting a war, we are, nevertheless, intellectually remiss in this regard. Until the current year one had only to peruse a representative number of works dealing, respectively, with military strategy and "disarmament" to note the almost total absence of speculation on the mutual effects of the two lines of thought. We may even go so far as to say that the temperament and genius which might incorporate these matters meaningfully was not encouraged to develop until necessity cried out for it.

The reasons for this situation are amply clear. Military strategy is traditionally the province of the warrior—or war-scientist—who generally bases his assumptions on the improvement of technique, the irregular ascending parallelism of weapon and counterweapon involving greater and

greater cost and complexity, rather than on the consequences which might ensue from subtraction or limitation of arms capability. Furthermore, as a result of his experience and training, he profoundly distrusts any artificial restriction of his capacity to provide for the national security.

He is not apt to tolerate the nonuse or nonproduction of a useful military object, unless this abnegation is counseled by sound strategic, or perhaps economic, reasons. He may endorse the renunciation of certain weapons (such as poison gas or micro-organisms) or he may theorize the limitation of warfare according to rationalized formula. But he will wish, nevertheless, to have a capacity in even those weapons whose use he does not anticipate. He is too familiar with the abortive and untrustworthy attempts at disarmament that have occurred in his lifetime to believe that this solution is more than Utopian. He regards the negotiated surrender of any significant part of his arsenal as dangerously naive or perhaps treasonable.

Clearly his job is to deal with the mathematics of likelihood. He cannot willingly subscribe to any venture, however honorable or seemingly reasonable, that might subvert the calculations which correspond to his estimate of adequate security. Working as he does within the fairly ordered limits of known objects, their function and mutual effects, he does not care much for abrupt reorientations or lingering uncertainties. If he fears the effects of "technological breakthrough," some type of progress so sudden as to cast many of his equations in doubt, he is at least required to face this eventuality with painful resolution.

He is even warier of "backward progress" which might deny him some highly dependable part of his weaponry against the pledge of an unscrupulous enemy to make a comparable sacrifice. He may be as devoted—often more devoted—to the cause of peace as are his compatriots who know less of war, but he is psychologically accommodated to the science of his *métier*, whose purpose is primarily to ensure security, and, in the case of war, defeat of the enemy. As he sees his countrymen becoming trapped in opinions and convictions that weigh heavily against strategic realism, he convinces himself that in a world where mass destruction may be imminent it is no time to let one's guard down.

There is much to commend in this attitude, and it is not my purpose to castigate preparedness. But it is crucially important, especially when the avowed military policy of the Nation is not to initiate conflict, to have an unclouded picture of where security can most logically be found. Any lack of intellectual flexibility in seeking new solutions based on the strikingly original context of the military situation in the 1960's can be dangerous. Piousness and older forms of cautions are not enough.

Opposed to our cliché of the military thinker we have lately found the "disarmament expert" who argues that preparation for nuclear war on any scale exceeds the bounds of right reason and morality. This expert, if we may again generalize, is apt to be a bit of an idealist or a pacifist, in few cases a bona fide military scientist with a grasp of the bewildering complexities of technological war. His humane optimism often is directly belied by the experiences of the soldier.

The disarmament expert is at the disadvantage of not being legitimately professionalized—there is no army for peace to form him as there is one for war to form the military thinker. He may be a statesman, a scientist, or a scholar, but he usually issues from some vocational category that automatically inspires uneasiness in military circles. Disarmament has been traditionally construed in some quarters as a topical haven for blue-stockings, parlor pinks, or nutty isolationists who claim, at the extreme with Bertrand Russell, that salvation from nuclear holocaust is better than risking war for the sake of national survival.

To many, arms limitation has seemed abstract, confusing, cosmopolitan: unattainable, and hence useless; at the same time too dangerous to attain. Its proponents have, in general, been vastly more concerned with issues of morality, which cannot be predicated and hence contribute nothing to reassure us, than with measures of stability, which can be made real and tangible. This has been a calculated irritant to the strategist who cannot permit himself to take such things for granted.

Thus we can see that on the psychological plane, to say nothing of the practical, there has been little incentive for the profitable correlation of views in these two spheres. Disarmament presupposed the restriction or abolition of weapons or forces, without the ability to describe positive areas of benefit in terms of a strategy of nonuse or abstinence.

Military preparedness at the same time seemed to demand a vigorous effort to multiply existing potential for war and develop new and more destructive weapons systems. It was

hard to see that there could be any *rapprochement* between the two views, both of which were paradoxically pursued as components of government policy.

Arms Control: Technical Military Problem

In the past year there is considerable evidence that this situation has changed and that arms control has begun to be thought of as a technical military problem. There are a number of reasons contributing to this conclusion.

The first, and most obvious, reason is the quantitative development of the examination of arms control problems. As basic knowledge in this fundamentally new field of research has increased, its relationship with strategy has begun to emerge. It has become equally evident that, however terrible war appears in this century, certain restraints have always operated to curtail the belligerent nations from their full use of indiscriminate military power. These restraints, without exception unilateral and self-imposed, suggest that further limitations might be achieved if it is clearly in the interest of both parties to do so. We recognize a willingness on behalf of the Soviets to believe that total nuclear war is, in most instances, an unacceptable instrument of policy, and we surmise that they would be interested in certain measures that would diminish the likelihood of its breaking out by accident.

Second, the advent of the missile age has produced an increased awareness that the advantages of first-strike capability, particularly in the form of surprise attack, could prove decisive in a total nuclear war. With the operational readiness of the second-generation of solid-fuel missiles anticipated in as little as two years'

time, the problem of warning has become critical, so critical that it probably cannot be solved effectively by improved radar nets or even by permissive inspection of the territory of the adversary. A 20-minute alert cannot be considered a safe margin of preparation for the defensive force, involving as it does not only the launching of the riposte but also the manifold problems of identification, communication, and decision making. If, however, certain types of control in themselves would not be feasible in solving the surprise attack problem and if unilateral "hardening" and mobility of the retaliatory deterrent seem more promising, the grave issue raised by the subtraction of warning time has, nevertheless, led strategists to approach the problem through the possibilities of arms control.

Third, it now appears that an unlimited arms race must, sooner or later, produce either technological breakthrough, favoring the potential attacker out of all due proportion, or else lead to such conditions of hostile suspicion and political disequilibrium that a total war would become inevitable. The alternative to this mounting spiral of menace would seem to be some kind of limitation or "freeze" on the essential strategic weaponry of the antagonists. By this means, some have hopes that a "balance of terror" or "mutual deterrent" can be created that would make strategic nuclear conflict unthinkable for both sides. Others, like General Thomas S. Power of the Strategic Air Command, feel that in lieu of an effective control system, the same deterrent effect may be achieved by making the potential retaliatory force invulnerable, that is, able to ride out a first-strike.

Fourth, there is grave concern

among some students of strategy and some concern everywhere about the possible dangers of accidental war, however triggered, or of "catalytic" war, in which the aggressive acts of a smaller power (with or without nuclear weapons) might involve the major nations in a total thermonuclear conflict. It is suggested that certain measures of inspection, unilateral safeguards, and an efficient communications system between the military forces of the US and the Soviet Union would greatly lessen the chances of going to war by accident. As for "catalytic" war, its probability might be decreased by mutual circumspection on the part of both major powers (which would be implicit in their agreement on certain types of arms control) or by joint action of all nuclear powers in attacking the problem of future "Nth" countries, that is, those whose technology shortly will permit them a nuclear weapons program.

Finally, the question of the psychological underpinnings of our alliance system cannot be ignored. We have, like it or not, and in part because of the inadequacy of Western governments in communicating the content and rationale of positive defense goals to their peoples, reached a situation where increasingly large sectors of democratic populations regard any sort of negotiated disarmament as a panacea to the dangers of the nuclear age. The disproportionate publicity given to the abusive genetic effects of radioactive fallout (a mounting campaign which can be traced directly back to the Soviet-inspired Stockholm peace appeal of 1949) has engendered the attitude that nuclear war is morally wrong as well as intolerably destructive. The fact that we have cho-

sen to negotiate arms control issues with the Soviet Union and her allies in Geneva over the past two years has indicated that we attached such importance to the content of these discussions that we were unwilling to accept the responsibility for suspending them. We have unilaterally placed a moratorium on nuclear testing, not only in the atmosphere but below ground, because the pressure of world public opinion counseled such a step.

The government of our principal ally, Great Britain, has had to face not only the severe perplexities of her own strategic situation but also the challenge of a forceful public opinion, spearheaded by the Campaign for Nuclear Disarmament, which organizes "peace marches" and bases its platform on renunciation of the production and use of all nuclear weapons. Similar tendencies in growing strength can be observed in all the nations of the Atlantic Community. The attitude of the neutralist countries, which seemingly practice a diplomacy of "peace at any price," constitutes another influential external pressure upon our choice of strategies.

Failure to Face the Issue

The public at large, which has no instinctive grasp of the defense problem or such strategic niceties as "mutual deterrence," generally believes that any resort to nuclear arms is both hideous and immoral, even if the weapon in question is as small as a nuclear antitank weapon. The drift of such a psychology, unless checked, is clearly in a single direction: renunciation of the first-use of nuclear devices, and unilateral disarmament. Public pressure, well-intentioned but misinformed as to the proper equations of survival, could in time lead

us to so weaken our defenses that there may someday be no question of our military inferiority to the Communist bloc.

Threats and attempts to make us yield ground, as at Berlin, would then be less subtle and ambiguous. Our alliance system would deteriorate because of our inadequacy to meet commitments. This is not a mere nightmare but a distinct possibility, unless the strategic requirements of Western defense can be made rational and meaningful to the democratic peoples and accepted by them as vital factors of stability.

A public is prone to jump to conclusions wedded to easy slogans and moral preachments. But the condition we describe is no less due to the failure of Western governments to insist that their publics face the issues squarely and to give them the material for forming conclusions. To shun the admittedly unpredictable consequences of public discourse concerning matters affecting the survival of the Nation is, in a wide sense, to concede the failure of the democratic process. Our leadership frequently has been neither consistent nor courageous on this score. This is a commanding reason why Mr. Macmillan's government must adopt vacillating strategic policies in response to the pressure from the people it represents, partially from the fear that a lack of flexibility would create even less desirable effects and disorient the internal political structure. In the United States we can still avoid this dilemma if we move quickly and resolutely. "No People by 1970" is a startling slogan; but it tells us nothing of how to remain strong and free—and alive.

If mistakes of leadership, the adroitness of Soviet propaganda, the

rising influence of the neutralist nations, and other factors have led to an increasing belief among the peoples of the world that mankind must be protected against disaster by negotiated indiscriminate disarmament, this is a tide we cannot check. It is inconceivable that the United States could allow herself to oppose a quest for peace, however fuzzy and dangerous were the instrumentalities proposed. What we can and must do is to channel this onrushing tide in directions that contribute to the stability of the world order and the security of all nations. This can be accomplished not through the evasion of the question of arms control or through an inconsistent alternation of rigid and *ad hoc* formulas, which has been characteristic of some of the American programs of the past (this criticism is not intended as a commendation of Soviet proposals), but by careful and measured policies that reflect a desire for peace through the recognition of those factors that genuinely maintain it. Once we had done this, we would be in a much better position to prevail upon our allies to rely on our judgment, since their strategies are deeply dependent on our strategy. A realistic and integrated approach to the entire defense picture would enhance the fulfillment of that federation of free peoples toward which we uncertainly seem to be striving.

Arms Control and US Policy

Arms control, for a variety of reasons, is moving rapidly to assume a central position in the American policy perspective. Commonsense demands that none of the affected agencies—defense, diplomacy, science, education, civic leadership—should lag behind in assessing the consequences of this event or in contribut-

ing to the clarification of what we, as a government, must try to achieve. It would be particularly damaging if the Military Establishment renounced its significant, and in many ways dominant, role in the enterprise. In all areas of the arms control picture military planning is vitally affected. As we all know, decisions taken today will largely determine the adequacy and effectiveness of the defense force several years hence.

What can we do to bring these conditions of collaboration into being? How can we ensure that the interested parties in the arms control field can come together and construct viable policies contributing to world security? What is the role of military thinking in this operation?

- First, military staffs have a vital role to perform in acting as watchdogs. They must see that no arms control program presented in negotiations by the Western Alliance contains provisions that would damage our military posture in relation to that of the Soviet bloc. At the same time, they must be sufficiently aware that certain military goals must, under certain circumstances, be sacrificed for political achievements. They must be trained to view each problem from all possible perspectives.

- Second, the military staffs must be able, with great dispatch, to analyze the strategic consequences of all decisions taken and predict the scope of all side effects throughout the military organization. This would include such obvious factors as "mix" of weapons systems, reconnaissance activities, procurement, research and development, tables of organization and equipment, tactical training, and others.

- Third, the military must propa-

gate and teach, to a much greater extent, within its own backyard, the rationale behind US policies so as not to leave among highly placed officers a residue of resentment against looking at strategy from a not entirely military perspective.

• Fourth, trained arms control experts in military life must make positive and original contributions to the solution of all aspects of the problem. Their native suspicion of disarmament may even serve them in good stead, preventing them from falling into traps that civilian officials might be less likely to detect.

To consider the question of collaboration broadly, there is no reason why military experts from the service cannot work well with scientists, diplomats, and other officials in tackling the arms control question. It is true that this has not been so in the past, when on frequent occasions the Pentagon-Atomic Energy Commission bloc and the State Department-scientific bloc have been diametrically opposed on fundamental issues. But this has been due largely to a failure on both sides to conceive the problem in terms of strategic stability. As we suggested earlier, neither this nor military advantage nor moral satisfaction nor temporary diplomatic egotism should be at the base of our efforts to negotiate the control of weapons. We must urgently attack those areas where the possibilities of misinformation and technological imbalance could precipitate us into a holocaust that neither we nor the Soviets have planned or desire.

Safeguarding Strategic Interests

It is our mutual strategic interest to impose further safeguards on:

1. The likelihood of "surprise attack."

2. The possibility of accidental war.

3. The indiscriminate proliferation, by sale or home production, of nuclear weapons.

4. The circumstances that might lead to "catalytic" war.

5. The dangerous concentration of conventional (or nuclear) ground forces in specific sensitive regions.

Backed by a coherent plan, it would be to our interest to propose negotiations in these areas. Nuclear testing is a sidelight compared to these other dangers, any of which might escape the control of the paramount powers.

There are, to be sure, many instances of self-imposed or unilateral arms control which are practiced today by ourselves and the Soviets. These measures often escape the ordinary definition of arms control because of the comparatively poor understanding we have had of the subject and its relation to strategy. One example would be the relative reluctance of both sides to provoke border incidents on both the German and Korean fronts. Another is the significant fact that we do not jam each other's strategic warning systems with electronic or other devices. Neither, it can be assumed, do we observe maximum randomization in our flights of strategic aircraft. Any resort to one or all of these practices from which we presently refrain might have the effect either of a diplomatic bluff or threat, or a preparation for all-out war.

Generally speaking, the measures that we desist from are those that could be interpreted by the enemy as belligerent acts, gestures that might cause a "preemptive" strike to be launched. There are other "passive" measures possible that can contribute solely, or very largely, to defense and

cannot be viewed as preparation for a nuclear surprise attack. These would include the "hardening," dispersal, and mobility of our missile forces, so long as the number of weapons was not significantly increased. Both we and the Soviets have an interest in promoting such measures which increase mutual deterrent power and create more stable military relationships.

Building World Stability

What kind of policy could we pursue in recognition of these dangers that might contribute to world stability through arms control and yet not fall into the trap of allowing the Soviets to use protracted negotiations for propaganda and the development of strategic advantages? Like all arms control projects, such a plan would require deep reflection on strategies and attention to innumerable technical details. Without going deeply into these matters and working from the assumption that a coherent Western plan can be presented, here is a possible framework for action that should meet military criticisms.

Gravely concerned with the appalling threat of uncontrolled nuclear danger, we should propose negotiations along the lines previously cited. The mechanism of the mutual stability argument should be conveyed clearly to the Soviets prior to the opening of discussions through normal diplomatic channels, provided that the West has been able to forge a coherent proposition and not merely a piecemeal collection of obsolete and compromise measures. In the meantime, Western public opinion should, for once, be persuaded by its leaders that we *have* a viable program to offer, that we definitely mean business, and that failure of considera-

tion by the other camp will necessarily involve an increased and improved defense establishment, the only logical response to continued Soviet intransigence.

If this latter course becomes necessary, the government should not flinch from its responsibility. It would make no outwardly offensive preparations that might increase the danger of preemptive attack. But it could do many things to increase our defense posture that could not be interpreted as threatening the enemy. Such measures might include an intensified airborne alert, a crash program on the hardening, dispersal, and mobility of our retaliatory missile force, the establishment of an extensive tactical airlift, and the creation of more rational ground force units for fighting local wars.

Superficially, the last two measures seem offensive in content. But it will be readily seen that they are consonant with defensive stability since, when strategic invulnerability is promoted, the risk of local war is apt to become correspondingly greater. Some hold that these measures are needed instantly, in any case, regardless of Soviet action. Others predict that if not absolutely necessary at the moment, they are inevitable. It would be logical to improve our defense posture, if possible, in direct response to our adversary's demonstrated unwillingness to negotiate grave matters of mutual concern.

We realize that such a procedure may be highly unpopular with certain of our allies who would hold that the least dangerous course is always the most succinct. Unfortunately, the least dangerous course is also often the least productive. We must also be prepared to scandalize some of the neu-

tralist powers. These disadvantages should not deter us from our course. We must make every rational effort to convince the doubters that our plan of defense is designed, *at slight risk*, to increase the stability of the global military equation, reduce the chances of nuclear war, and indirectly protect the national livelihoods of our erstwhile critics.

Framework for Action

Let us review the steps involved:

1. The elaboration of a careful and viable system of arms control designed to reduce accidental or unstable factors. The program would be especially designed to mute the capability for surprise attack, from whatever quarter.

2. The presentation of a clear and unequivocal challenge to Soviet Russia through diplomatic channels to negotiate our proposals or face the consequences of a strengthened Western defense.

3. The prudent preparation of opinion in the Western countries for the exercise of this policy.

4. If the Soviets respond favorably, every effort would be made to accommodate their legitimate sensitivities in negotiation, provided that principles vital to strategic stability were not abandoned.

5. A moratorium would be set on the negotiating period so as to ensure against tactical exploitation of the conference.

6. If the Soviets refused to negotiate reasonably, America and the other Western countries would proceed immediately to strengthen their defense forces.

7. No measure would be taken that was palpably offensive; no further incentive to surprise attack would be created.

8. Every effort would be made to communicate to the adversary and the neutral nations the defensive nature of the additional preparations. International inspection teams could be invited to oversee elements of the buildup, without, of course, the unwarranted sacrifice of security information.

9. The opportunity for negotiations would be left open at all times during the period of the buildup and after. The burden of reopening talks would then be placed squarely on the Soviet Union.

Penalty for Insincerity

Some may ask if it would not be expedient to treat these proposed arms control negotiations halfheartedly so as to gain an excuse for beefing up our defense. To do this would be extremely unwise. Our motives would be shockingly transparent, and we would forfeit much prestige with our NATO allies and other friendly countries. Our position in all other negotiations would be imperiled.

With more validity it can be argued that we would set a dangerous precedent by making the scope of our defense effort an element of the bargaining process. In principle, it is certain that this interpretation should be avoided. But the instance of which we are speaking is a particular one. It would not have to become a guiding rule unless we foolishly make it so. Normal planning for defense should never be interrupted on the chance that we might reach an agreement with the Soviets. It is only the *additional* effort, which thus far we have been unwilling to make, that should be injected into our negotiating tactics.

There are indeed many reasons to believe that the potentiality of mo-

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bilizing more of our resources for defense is, in the last analysis, our best bargaining point. Our unambiguous proposition of negotiations on specific measures designed to reduce the accidental factors of nuclear war should lend to our arms control program a clarity and disinterestedness it has lacked in the past. As Herman Kahn of the Rand Corporation has written:

As technology advances, as weapons become more powerful and more diverse, it is most likely that there will have to be at least implicit agreement on their use, distribution and character if we are not to run unacceptably high risks of unauthorized or irresponsible behavior. No matter how inimical the Soviets feel toward us, they have common interests with us in this field. This does not mean that they will not try to use the common threat to obtain unilateral advantages; it just means that there is an important area for bargaining here and one which we must fully exploit.

Adding New Dimensions

Arms control plans of this type, that would enhance and not sacrifice security, deserve the undivided attention of military men. The services have lagged behind the civilian agencies in considering the consequences of arms control. Often this has been

encouraged by those who fear the type of influence the military might bring to bear on the problem. We feel that these fears are unjustified, because we have confidence that the military can add new dimensions to our thinking on this subject, if arms control can be seen in its proper light, as a strategic problem.

Arms control has become a central aspect of national policy and will remain such. The incoming Administration will be compelled to adjust its organizational structure and channels of decision to this fact. Various arguments and proposals have already been made concerning the nature and location in the government of the policymaking body that would assume authority for arms control propositions. An unmistakable trend is to play down the role of the Department of Defense in any such reorganization because of its allegedly hostile views on the subject.

If there is hostility, we do not think it is to the Nation's advantage that it should be perpetuated by suspicion or by sanctions. We believe that all thoughtful military leaders should concern themselves deeply with the strategic implications of arms control and be prepared and permitted to make positive and authoritative contributions to this aspect of the security question.

... an increased possibility of general war by accident emphasizes the importance of seeking agreements on disarmament—not for propaganda purposes, but to achieve a realistic, workable, reliable system of arms reduction. Any disarmament system to which we agree, however, must meet two absolutely indispensable prerequisites. *First*, it must not entail any reduction in our *relative* military strength. *Second*, it must provide for a sound, workable, verifiable inspection system to ensure that agreed reductions are actually carried out.

General Lyman L. Lemnitzer

ACCIDENTAL WAR

DANGERS
IN THE 1960'S

A Mershon National Security Program Study

This study is a condensation of a 25,000-word report produced under the guidance of Dr. John B. Phelps, Research Associate, the Mershon National Security Program, Ohio State University, Columbus, Ohio. The Mershon Program is a nongovernmental agency supported by the bequest of the late Colonel Ralph D. Mershon, United States Army Reserve, to encourage education and research in national security matters. Contributors to this study include David E. Cummins, Donald S. Edgecombe, Ralph B. Hoffman, Dean S. Lical, Patricia Rosenberg, Robert F. Rountree, Jon Mikal Townsley, and V. Van Volk. The opinions and conclusions in this study are those of the authors and are not necessarily endorsed by the MILITARY REVIEW or the U. S. Army Command and General Staff College.—Editor.

CHECKMATE, stalemate, and deadlock. These terms, applied with increasing frequency to the military power situation existing between the Soviet bloc and the Western Powers, present a picture of mutual deterrence which precludes either side from deliberately provoking a general war.

What, then, is the danger which lies ahead in the 1960's? The first year of this decade has brought declarations of peaceful coexistence, economic and political competition, and pleas—sincere or facetious—for world disarmament. Concurrently, however, the Soviet Union has pushed the art of brinkmanship to the limit. Disarmament proposals have alternated with threats of armed retaliation for political acts unfavorable to the USSR.

If we accept these theories of nuclear stalemate, the obvious threat which remains is the possibility of one side or the other taking some action which accidentally, or if you prefer

unintentionally, ignites a third world war. Attention to this problem now may bring out some major dangers which have gone relatively unnoticed in our traditional approach to national security. It may suggest some practical means of enhancing security for ourselves and the rest of the world.

"Accidental war" as used here is equivalent to "war by miscalculation" and "unintentional war." A formal definition is not required; the question of transcendent practical interest is whether or not a large-scale nuclear war between East and West may, through some combination of circumstances, come about without the intention of either side to launch such a war.

Consideration is limited to the next 10 years because this now seems to be the critical period and because predictions further into the future become too speculative.

Many wars in history have been more or less "accidental." But the destructive power of modern weapons and the extraordinary compression of military time that goes with them bring to the question of accidental war a new and potentially terrifying significance.

There seems to be a widespread but seldom clearly articulated belief that any large-scale nuclear war in the next decade will be really accidental. But in the absence of effective arms controls, world leaders seem to regard nuclear weapons as the arbiter of an uneasy peace.

The likelihood of an accidental war depends on the level of international tension and on the strategic posture of each side. In recent months there has been increasingly sophisticated discussion of the requirements of "stable" deterrence. Relatively invulner-

able forces are militarily desirable. A retaliatory deterrent must be "credible," that is, the enemy must know it not only could but *would* be used against him if he attacked.

The notion of a "preemptive strike," to prevent destruction of one's own vulnerable forces, has received some attention in military writing and congressional testimony. But, almost without exception, the analyses of deterrence take for granted good military intelligence and rational—if cold-blooded—decision making on each side. The only kind of "accident" ordinarily mentioned—and then not very conspicuously—is a preemptive strike resulting from faulty intelligence warnings. There is no allowance for international tensions, collective anxieties and frustrations, and the predispositions of individual leaders. Accidents—the unforeseen and unpredictable, the irrational—do not lend themselves to precise analyses, but we believe that they must be taken much more seriously and explicitly into account in our planning for military security.

The problem of accidental war can be approached in three ways: through history, to see what insights and lessons may be applied to the special problems of the 1960's; through prevailing—if unpublished—thinking on the subject, as reflected in the views of presumably knowledgeable persons; and through an effort to analyze in some detail various possible types of "accidents" which might occur in the 1960's and the manner in which they could precipitate an accidental war.

Accidental Wars of the Past

Just how accidental wars of the past were is a question upon which historians disagree. It is particularly difficult to distinguish "accidents," as

we are concerned with them here, from the manifold mistakes of military and political judgment which seem so clear in the hindsight of history. Nevertheless, there are some observations from the past which are useful in our study of the 1960's.

Tension which existed before the start of hostilities played an essential part in igniting most wars. This tension provided the momentum for war once an accident or incident occurred, as in World War I and the Franco-Prussian War. The importance of tension is revealed in situations where the avowed *casus belli* was removed before hostilities began, yet pressures for war made it inevitable. This was the case when Serbia gave a seemingly satisfactory and conciliatory reply to Austria's ultimatum, but World War I still broke out.

There are also cases in which provocation for war existed and yet war was avoided because tension was relatively low or the national temper less belligerent. Thus the Japanese bombed the gunboat *Panay* and strafed its survivors in 1937. The sinking of the *Lusitania* failed to bring the United States into World War I. And there are numerous examples of treaty violation and overt aggression—Hitler's occupation of the Rhineland and Mussolini's invasion of Ethiopia, for instance—which failed to bring war because nations were conspicuously unready for war and determined to pursue peace.

Causes of Past Wars

Many wars in the past have resulted from military and diplomatic miscalculations. However, it is difficult to find parallels for the kinds of military systems accidents which have been made a possibility by technology. The disastrous charge of the famed

British Light Brigade in the Crimean War resulted from a misinterpreted order. The sinking of the *Maine* in Havana harbor may have been a genuine accident.

Human aberrations too have played their part in history. Hitler is a notable example from recent history. Napoleon's apparent belief in the invincibility of his armies certainly contributed to their ultimate defeat.

It is clear that nuclear weapons and their delivery systems bring a new and frightening cause of accidental war into the realm of possibility. For this particular danger history gives us little guidance. The principal lessons of history seem to be that human aberrations do occur in critical positions, and that accidents lead to wars when international tensions are high enough or when either side needs only an excuse for war.

Prevailing Opinion on Accidental War

In an effort to survey the opinions of knowledgeable persons on the dangers of accidental war in the 1960's, we sent letters of inquiry to members of the Senate Foreign Relations and Armed Services Committees, The House Foreign Affairs and Armed Services Committees, members of *ad hoc* government committees which have dealt with national security matters, and a small number of other selected persons. We asked for general comments on accidental war and on the relative seriousness of likely causes of accidental war.

The replies we received showed great diversity in approach to the problem. Some indicated great concern with the probability of accidental war occurring if higher and higher levels of armament are pursued by both the Communist and the Western Nations. Others expressed a belief

that no general nuclear war is possible so long as the United States maintains a strong deterrent force.

The majority ranked the spread of limited war as the most serious danger. Several replies considered this cause as by far the most important, with other causes either related to it or so improbable as not to merit ranking. Diplomatic miscalculation ran a close second. Several ranked this first, one or two by a wide margin. Others felt that this category and limited war are intimately related in that any limited war would probably be caused by a miscalculation. One senior military analyst rated the joint probability of war from these two at 50 percent in the next 10 years.

This emphasis on the danger of the spread of limited war contrasts with several other replies which indicated a feeling that no general war was possible and that small wars only would take place in the next 10 years, but did not consider the possibility of their spreading unintentionally. Catalytic war was ranked by the majority as the least likely to occur, and several felt that it does not merit serious consideration. Some respondents felt that it is unlikely except as a consequence of limited war. Systems accidents and human aberrations were considered, on the whole, as less serious than the spread of limited war or diplomatic miscalculations.

An educator expressed the view that while the spread of limited war is the greatest risk, it is also the area in which "resourceful, determined statesmanship could be most effective in preventing the risk from arising." One person expressed the opinion that it would be almost impossible to contain limited wars. A Congressman felt that, although the spread of limited

wars is now the most dangerous potential cause, if there is a further dispersal of nuclear weapons the danger will be shifted to the multiplied number of possible defense systems accidents. It was implicit in some replies, particularly many from Congressmen, that the danger of accident was conceived of as lying with Soviet error, miscalculation, or aberration, and that such danger was not present on this side of the fence. Others seemed to regard the danger as existing in both power blocs.

Specific Dangers in the 1960's

Speculation on the various kinds of "accidents" which could conceivably lead to a nuclear war yields an enormous range of possibilities. In an attempt to analyze these possibilities systematically, five broad accident categories have been established and examined individually. These categories are necessarily arbitrary, but include most of the types of accidents which appear possible. They are:

Defense systems accidents—false radar signals, accidental nuclear explosions, misunderstood or miscommunicated military orders, and faulty intelligence warnings leading to preemptive attack.

Human aberrations—the aberrant bomber or missile commander, willfully irresponsible or deranged leadership, and possible forms of sabotage by "friendly" personnel.

Unintended spread of limited wars—includes an analysis of the circumstances in which limited wars might or might not spread.

Catalytic war—involving a plot by one or more nations, perhaps with nuclear weapons, to precipitate a war between other nations, each of which might have poised retaliatory forces.

Diplomatic and military miscalcula-

tions—mistakes in brinkmanship and failure to foresee the consequences of military actions. Rather than speculate on the enormous variety of possible miscalculations, several postwar crises are examined with an eye to their possible recurrence and seriousness in the future.

The first category includes mainly technical mishaps and ordinary human mistakes. Accidental nuclear explosions are discussed separately since these have been a question of special popular concern.

Defense Systems Accidents

Accidents of this type are almost entirely a consequence of modern weapons and their associated technology. Our concern is with the possibility that a large nuclear attack might be launched as a result of a technical mishap or a simple human mistake. The asymmetry of information compels us to focus our attention on Western forces and apply a kind of correction factor to allow for the Communist nations.

Accidents may occur at any point in the processes of information gathering, information evaluation and decision making, and the launching or near-launching of weapons carriers. Warning of an attack in progress would come from radar systems, from the Ballistic Missile Early Warning System or the *Midas* early warning satellite. Warning of an impending attack would come largely through intelligence sources.

In principle, and as far as possible in practice, the ultimate responsibility for information evaluation and decision making rests with the President. A great deal of auxiliary machinery exists to advise him and in some cases to save time in implementing decisions he may reach. Some

timesaving steps, more or less precautionary, such as the launching of bombers under "positive control," may be taken on the authority of lesser commanders. Retaliatory forces in the 1960's will consist of manned bombers and a rapidly growing proportion of first and then second and third generation missiles.

It is of interest to consider some of the incidents which have occurred in the United States strategic machinery to date and some kinds of possible accidents which might be hypothesized. Of course, unclassified information is limited, but published materials and congressional hearings are useful sources. Precautionary measures have been taken in the Strategic Air Command (SAC) as a result of ambiguous warnings on many occasions. Nuclear weapons have been involved in about 10 major accidents but there have been no nuclear explosions. One operational intercontinental ballistic missile blew up on its launching pad. Antiaircraft missiles have misfired several times and have been accidentally launched at least twice. False radar warnings, including an apparent flight of bombers moving over the Atlantic at 2,000 miles per hour, have occurred frequently. There have been many test alerts of US retaliatory machinery.

On the Communist side of the fence very little is known, but Premier Khrushchev is reliably reported to have told Vice President Nixon about an erratic Soviet missile which was destroyed by a signal from the ground as it headed toward Alaska.

Many kinds of possible systems accidents have been suggested, sometimes, we believe, without much technical basis in fact. Neither a flock of geese nor a shower of meteors is

likely now to trigger US retaliation with manned bombers.

Dangers of Quick Reaction

Similar dangers are certainly increased, however, as we move more firmly into the missile age and warning times become shorter, particularly if our retaliatory forces are vulnerable. The technical development of our over-all machinery of retaliation in the next decade presents some major problems with respect to safety and the avoidance of potentially dangerous accidents. More sensitive radars are more likely to give spurious signals. Faster reaction times will require less human decision making and a greater dependence on automation. Computers may be required to discriminate reliably between missiles and meteors in a few minutes at most. Increasingly reliable, unjamable, and rapid means of communication must be built.

It is clear that the President has already been obliged to delegate, in fact if not in principle, some of his ultimate authority to order the use of nuclear weapons, first for defensive purposes, and second for retaliation. He will be forced to delegate more. The present "positive control" of airborne SAC bombers has no parallel in ballistic missiles. Operational missile warheads are not armed until ready for firing, but the missiles do not have effective "destruct" systems which would allow them to be destroyed in flight.

Communist and Western defense systems may be expected to follow the same very general course of development although technical emphases and operational systems will differ. There is strong evidence, from air safety records for instance, to suggest that Communist systems will be somewhat

less sophisticated insofar as technical safeguards against accidents are concerned. There is also a question about how much responsibility is delegated to Communist commanders. For example, Premier Khrushchev recently implied that Marshal Malinovsky or others could order an attack on *U-2* bases.

Accidental Nuclear Explosions

In examining the question of accidental nuclear explosions we are particularly handicapped by the lack of unclassified information. But some insight may be gained by collecting data on nuclear accidents, although no weapons accidents have resulted in a yield of nuclear energy, and by attempting some order-of-magnitude calculations on the probability of an accidental nuclear explosion. A nuclear explosion involves bringing together, under exactly the right physical conditions and in a time period measured in millionths of a second, a minimum quantity of fissionable material such as Uranium 235 or plutonium.*

Data is available on accidents in the nuclear energy industry. Two or three major reactor accidents have occurred which involved a temporarily uncontrolled but nonexplosive release of nuclear energy. About half a dozen persons, here and abroad, have received lethal radiation doses and a larger number have received sublethal doses. Two of these deaths occurred in the process of weapons-oriented experimentation. However, except for the common basic physics involved, nuclear industrial accidents bear little relation to the problem of the accidental explosion of a nuclear weapon.

Approximately a dozen major inci-

* See "Our Nuclear Weapons are Safe," *Army Information Digest*, January 1961.

idents or accidents involving United States nuclear weapons are known or reliably believed to have occurred, mostly in plane crashes. Two of these were overseas—one in England and the other in North Africa. On two occasions, one confirmed by the Air Force, nuclear weapons or parts of them are believed to have been jettisoned in emergencies over water by planes in flight. On one occasion, in North Carolina, a nuclear weapon was accidentally dropped by a *B-47* in flight with a chemical explosion on impact. Four other incidents have occurred in plane crashes in Texas, Louisiana, New Mexico, and Kentucky. A nuclear-armed *B-47* exploded on the ground at a Louisiana base. Most recently, a *Bomarc* antiaircraft missile with a nuclear warhead burned at a New Jersey base.

In many of these incidents a localized radiation hazard has existed briefly and measures have been taken to seal off and decontaminate the area affected. Many lesser accidents involved in the maintenance, transportation, and modernization of actual nuclear weapons are known to have occurred. One informed estimate places the number of these at approximately 50 for US weapons since World War II.

The fact that, in a sizable number of accidents, no nuclear explosions have resulted indicates that, to date, United States nuclear weapons have effective built-in safety features. Some of these features have been proved in Nevada weapons' tests.

A consideration of the physical conditions which must exist for a nuclear explosion to occur suggests a variety of electrical and mechanical safeguards, and many of these are presumably incorporated into US nuclear

weapons. Crews are thoroughly trained in handling their weapons and in the sequence of steps in the arming process. For weapons carried in bombers and manually armed in flight, a maximum number of safeguards is possible. But for weapons inaccessible in flight, in missiles or externally carried by aircraft, arming must be accomplished automatically or electrically, and more difficult safety problems are clearly presented.

Probability Factors

Some semiofficial estimates place the probability of explosion of a single weapon under stress, as in a crash or maintenance mishap, in the one in 1 million to one in 1 billion range. Our own judgment suggests that the probability is somewhat greater than this. We have no basis for quantitative speculation on the likelihood of explosion of the nuclear weapons of countries other than the United States. Probably the Communist nations, including China, are and will be less safety-conscious than the US, and the spread of nuclear weapons to more countries in the next decade compounds the problem.

There will probably be, in all countries possessing nuclear weapons, great pressure for the development of lighter, smaller, and more novel weapon designs. Provision must be made for arming weapons by remote control. Various technical compromises between military reliability and safety will have to be made. For these reasons experience with manned bomber-carried weapons to date is not an infallible guide to the future. Considering all these factors, we are led to the very general conclusion that the accidental explosion of one or more nuclear weapons in the next 10 years is not improbable.

Would an accidental nuclear explosion start a war? Possibly, but probably not unless it occurred in a time of extreme tension, or it happened to destroy an important city or military target, or there were reasons to believe that it was really an enemy weapon. An accidental explosion probably would not result in the full design energy yield of the weapon and it might, therefore, be relatively less destructive. Several accidental explosions in a short time period could have serious consequences, but the probability of these happening coincidentally is infinitesimal. In sum, it appears that accidental nuclear explosions are among the least likely direct causes of accidental war.

Human Aberrations

The carefully planned and elaborate safety devices built into US weapons systems are designed to minimize the probability of serious accidents resulting from human error or inadvertence. What about the possibility that a person, in some position of responsibility in a man-machine system and suffering from some form of mental aberration, could intentionally bring about a significant act of war? Our concern here includes not only persons with formal responsibility, such as missile or aircraft commanders, but also persons of any rank or status who might be capable of causing serious mischief.

History furnishes numerous examples of failures and incompetence among military commanders—there are a few clear cases of military misadventures undertaken without authorization. But because mental illness has only very recently been recognized as a distinct medical problem, the historical data is of limited value. And modern weapons have

enormously multiplied the capacity for mischief that may rest, at least temporarily, with an individual.

Although the dividing line is not sharp, human breakdowns can usefully be analyzed into those occurring at the command level and those occurring at the operational level of our defense systems. At the highest command level stands the tragic example of Adolph Hitler, who increasingly manifested obvious signs of mental illness as the war progressed. At low levels "promotion neurosis" was a recognized psychiatric phenomenon in which, for instance, a competent sergeant suddenly commissioned a lieutenant would develop partially incapacitating anxieties. Whether an aberrant commander can compel his subordinates to carry out a suspect order seems to depend on various circumstances, but a great deal of evidence suggests that in many cases he can.

Modern weapons have brought a great downward diffusion of effective, if not theoretical, responsibility for great destructive power to thousands of persons. Some World War II data on the general incidence of mental breakdown in the military services is pertinent, if not conclusive, for the circumstances of particular concern in the 1960's. In the United States forces 43 percent of all medical discharges were for neuropsychiatric causes. A large proportion of these discharges—40 percent in a similar Royal Air Force (RAF) study—occurred before operational or combat experience. In the RAF there was no evidence of predisposition to mental breakdown in 32 percent of all cases.

Of 12 psychiatrists with military experience whose opinions were sought, 10 believed that the problem of human aberrations in relation to

modern weapons systems was serious enough to warrant extensive consideration. There was general agreement that no existing tests will reliably screen out individuals susceptible to mental breakdowns.

The range of potentially serious psychological problems is extremely wide. The possible harmful effects of great responsibility, maintained over long time periods in an essentially passive peacetime—or cold war—role, are nearly impossible to predict. The limited official information we were able to obtain indicates that the main qualifications of, say, SAC bomber and missile crews are high-performance ratings and, although these ratings certainly involve a number of psychological factors, essentially no specific psychological screening is now used.

Safeguards versus Risks

On a statistical basis and over a period of years, the probability of a few breakdowns in positions of great responsibility is high. Some efforts have been made to build safeguards against human aberration into weapons systems. Thus Air Force regulations require that the signal to an airborne bomber to proceed to its target must be verified by the officer members of the crew. A further measure of control is exercised over the refueling plane if one is required and, in extreme cases, an errant bomber can be destroyed by other planes in its flight if this is possible. It is also known, for instance, that present plans for the *Polaris* weapons system provide for verification of the command to launch missiles by several members of the crew. Undoubtedly, other safeguards in US weapons systems exist but have not been made public.

There inevitably remain, however, situations in which individuals, such as the pilot of a nuclear-armed fighter bomber, are largely free of safeguards. There are a few people in very special positions—Francis Powers is an example—who are subject to a minimum of restraints. It should be noted that the possibilities for troublemaking by an aberrant individual are by no means limited to the delivery of nuclear weapons. Thus a *U-2* ground crewman, for instance, would have been in a position to sabotage Powers' flight.

Essentially no data is available on human breakdowns and safeguards to minimize their consequences in the Communist armed forces. There are probably fewer specific allowances made for mental illnesses than in the Western Nations. The distribution and regulation of critical responsibilities among individuals may be similar in practice although quite different in principal. Reports from defectors to the West indicate that Communist pilots, for instance, are under relatively strict orders to shoot down their errant comrades.

The dangers of accidental war resulting from some form of human aberration in the next 10 years are nearly impossible to quantify. But the range of possibilities is very large and, at least in comparison with technical accidents, safeguards are harder to devise.

Unintended Spread of Limited Wars

The unintended spread of limited war into a general war including a massive nuclear exchange is viewed by many observers as the most likely origin of an accidental war in the next decade. The reason for this belief doubtless arises from the near certainty of the occurrence of mili-

tary conflicts between the opposing world power blocs, and thus, to a greater or lesser extent, between the major nuclear powers.

One of the prominent uncertainties in an analysis of possible future wars is the role of nuclear weapons. These weapons are probably historically unique in that, while they are completely untried (except as destroyers of cities) in warfare, the professional military planners, apparently somewhat more on the American side than on the Russian, are becoming more and more dependent on them in future strategies for limited as well as general war.

This is particularly important in Europe where NATO is essentially committed to meeting any kind of attack with US nuclear weapons. This fact, together with the Russians' apparent lack of acceptance of the idea of a nuclear limited war and the destruction such a war would cause throughout Europe, makes very unlikely a limited war in Europe without a simultaneous US-USSR nuclear exchange. Indeed, any kind of armed conflict on a major scale in Europe which is not rapidly brought under control would probably trigger a general nuclear war.

In Asia and the Middle East, however, limited wars are more likely to stay limited as they have in the recent past. In these areas wars are more likely to be fought by "proxies" rather than by the great powers themselves. We will probably continue to see struggles between satellites and client states of the two power blocs, revolutions involving strong support of the rebels by a neighboring state, and violent internal rebellions.

In most of these cases the major nuclear powers will only be involved to

the extent of providing the material means to maintain the conflict and, possibly, specialized manpower such as pilots and submariners. Occasionally a major power may be involved directly on one side or the other as the United States was in Korea, but the conflict would probably remain limited if the other major power stayed out. In general, the use of proxies will assist in keeping a conflict limited since they will not usually possess the means, particularly nuclear weapons, of spreading the conflict. But this argument may be less valid in the later sixties.

Why Limited Conflicts Spread

We can pick out several factors which will help to determine whether a limited conflict will spread. It is essential that communications be kept open between the combatants, or at least between their great power supporters, so that no action by one side will be interpreted by the other as requiring an expansion of the conflict.

The costs of the struggle must not be allowed to get so high for either side—in terms of geography, military losses, physical destruction, political and economic factors, and so forth—that it would be impossible to negotiate some kind of settlement rather than face an expansion of the war. This will require some changes in the traditional goals or end points of wars—"unconditional surrender," "punishment of the aggressor," and so forth—as well as some modification of the traditional military doctrine of attempting primarily to destroy the enemy military forces. It will also be helpful to end or at least stabilize, in terms of geography and force, the military portions of the struggle as soon as possible—preferably before they begin.

It is well to note carefully the difficulties the use of nuclear weapons adds to keeping a conflict limited. The distinction between the use and non-use of such arms is qualitatively clearer and surer than that between various weapon yields and/or targets—the main criterion of "limitation" sometimes postulated by proponents of a nuclear limited war strategy. In addition, their great destructiveness and the lack of knowledge of their over-all effects in war add to the uncertainties attached to any use of nuclear weapons. Finally, the use of nuclear weapons by one side in a limited war would doubtless require the other side to do likewise. This would, in turn, probably bring the two major nuclear powers more actively into the struggle, with the consequent increased likelihood of the war spreading.

If one of the major nuclear powers does become involved in a limited war, it may or may not have the means for fighting the war with conventional forces. A "starving" of conventional capabilities may thus tend to force the use of nuclear weapons, with all their hazards, in a limited war.

Our discussion has tacitly assumed the current distribution of nuclear weapons among nations. As these weapons become more widely diffused, the problems of limitation of war become correspondingly great since more nations will have the means of spreading the conflict and/or bringing in the major powers. This problem is especially disturbing with respect to Communist China, since the Chinese rulers are on record as believing that a general nuclear war would be less disastrous for China than for her enemies.

The danger of catalytic war results largely from the spread of nuclear

weapons to a larger number of countries. It is possible that a small nuclear power could, in the right circumstances, launch a successful, unidentified, sneak attack on one or more of the major powers and thus precipitate a massive nuclear exchange between them. Viewed in the context of the historical behavior of nations, the likelihood that a nation would be strongly motivated to undertake such an attack seems small. Concealment of the source of the attack would be, at least in many cases, difficult.

A kind of general war catalyst which could become significant as more countries acquire nuclear weapons is that in which one of the small power participants in a limited war deliberately undertakes to cause a spreading of the conflict. This could be done by either an initial use of nuclear weapons or by their use in a deliberately provocative way. Red China seems to represent a particular danger.

Diplomatic and Military Miscalculations

East-West tensions have fluctuated in the years since World War II, but there has been a trend for periods of tension to occur more frequently during the last five to 10 years. In a time of tension in the next decade, nuclear war could result from intelligence blunders or miscalculated high-level decisions. It may not be practical to try to predict situations or mishaps which might occur, but it is at least instructive to review some crises of the past and to see to what extent the dangers which existed might have led, through some form of miscalculation, to disaster.

In 1953 the Korean War may have come near to being expanded when the United States threatened to bomb airfields across the Yalu River and use

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tactical nuclear weapons if the war continued. While truce negotiations were going on, South Korean troops broke into prisoner of war compounds and released prisoners. The Chinese did not choose to resume hostilities over this incident, perhaps because they knew they could not win an expanded war.

In April 1954, when the US made known her offer of aerial support for the embattled French troops in Indochina, Britain was not in favor of the proposal and the planes were not sent. Such an offer of assistance to an ally fighting a colonial war is less likely today but, should it take place, it might be even more at the risk of direct Soviet or Chinese intervention, possibly with "volunteers" and nuclear weapons. The Suez crisis in November 1956 was a particularly dangerous situation. The Israeli-Egyptian fighting on the Sinai Peninsula, the British-French invasion of the Suez area with the Soviet ultimatum to withdraw or face strategic rocket attacks, and the Hungarian Revolution combined to increase world tension to a dangerous level.

When intelligence reports of Soviet troop movements and unusual air activity over Turkey were received in Washington, the President was called back from Gettysburg and a special meeting of top security advisors was called. Fortunately, it was soon learned that the Soviet movements were not direct threats in the Middle Eastern situation, and United States forces were only partially alerted. If the unusual activity had not been identified and US forces had been fully alerted, a Soviet alert would probably have followed, further increasing the danger of the situation.

Again in the Middle East in 1958,

when US forces landed in Lebanon, British paratroopers landed in Jordan, United States Army troops with nuclear weapons were sent to Turkish airbases, and other US Armed Forces, including SAC, were alerted, the USSR made another, although milder, threat to the Western Nations. Soviet forces began maneuvers at key points along the Soviet borders adjoining Turkey and Iran. United States and British diplomats and military leaders felt that Soviet reprisal was unlikely but, with several countries' forces poised within fighting distance and alerted for an emergency, any accident or miscalculation could have triggered war with the Soviets.

Taiwan and West Berlin have been scenes of crisis in the past and are likely to be in the future. If the United States came to the Nationalists' aid again in defense of the offshore islands, chances of war would probably be greater than they were in 1954 and 1958, as China grows stronger and especially when she develops her own nuclear weapons. Defense of the islands, and even of Taiwan, will become militarily difficult against even short-range missiles with nuclear warheads.

Similarly in Germany, if control of the access routes to West Berlin are turned over to East Germany as the USSR threatens, some form of limited war could well result, and with the West committed to the use of nuclear weapons the situation would be dangerous. Attack on a Western airlift into Berlin might also mean expanded war. Because leaders on both sides of the Iron Curtain seem to recognize the danger of any war in Europe and because the USSR does and will continue to have control over East Germany, the danger here will prob-

ably be less than that in the Taiwan Straits when China develops her own weapons.

The recent *U-2* incident shows how a state of tension can arise suddenly during a period of relative calm. Soviet threats of retaliation against *U-2* bases if further flights are attempted and US slowness in announcing that the flights had been stopped set up an atmosphere of threat and counter-threat.

In each of these postwar crisis situations, either the United States or the USSR threatened some kind of forceful action and each took some kind of measures to carry out, or react against, the threat. A miscalculation or accident could have touched off a war.

Tension and Readiness for War

We have briefly discussed several types of accidents which *could* lead to war in the next 10 years. Whether any of these accidents, by themselves or in combination, *would* lead to war depends very much on the state of tension or "readiness" for war which exists when the accident happens. This is one of the principal conclusions from our historical survey of the causes of war. And it is a conclusion which, because of the nature of modern weapons and strategic balances, seems likely to apply during most of the 1960's.

There is at least one important difference between the historical situations and the 1960's: It is less likely that a modern nation can be propelled directly into a nuclear war by the temper of its people. American attitudes toward Spain in 1898 would not have led to war if both sides had had nuclear weapons.

Public opinion may stimulate a government to action, but it may also

effectively preclude certain actions if the likely consequences of those actions are too serious. (Red China is a possible, troublesome exception to this generalization because public opinion can be manipulated and its restraining influence may be minimal.)

Internal pressures, of the kind that Premier Khrushchev hinted may have resulted from the *U-2* incident, may lead to tougher policies, but it is very doubtful that either popular or official outrage would lead to a real demand for nuclear war. It is possible, however, that public demands for "firmness" or "action" might greatly increase the danger of war in times of tension.

In the 1960's the level of tension at any critical time can have a decisive role in the unique kind of guessing game which military leaders, particularly those with vulnerable retaliatory forces, may consider themselves obliged to play. The combination of vulnerable forces, such as bombers at their bases and "soft" liquid-fueled missiles, and the very short radar warning times associated with a ballistic missile attack, could place upon national leaders in times of extreme tension a burden of decision unprecedented in history. So long as intelligence is less than perfect—and it always is—the temptation to launch a preemptive attack to ensure one's survival must always be present.

Relatively little has been written or said publicly about this problem. However, it may be significant that, quite recently and for almost the first time in our history, the traditional "strike-second" policy of the United States has been openly questioned. In principle the danger of an accidental war resulting from a misguided preemptive attack is always present, but as

a practical matter the danger is probably greatest in periods of peak tension.

Vulnerabilities

In the middle and late sixties, both the US and the USSR should have less vulnerable retaliatory forces. Populations may, in effect, be held as hostages subject to destruction, but the temptation to attack preemptively should be somewhat reduced and a greater measure of stability should exist in the bilateral strategic balance. Although one danger of accidental war is perhaps lessened, another danger—harder to predict—may be growing. This is the diffusion of nuclear power. The US and the USSR will not be the only nations involved in the global strategic equilibrium. Red China seems, again, a cause for special concern.

We shall not attempt to speculate in detail upon the situations and dangers which may develop. But it is conceivable that in the 1965-70 period the central problem of national security may become not so much how to deter the enemy with the threat of force, which has been the main concern so far, but how, in an atmosphere of tension, to guard against a variety of possible accidents that could lead to mutual destruction.

If the chances of war by accident rise sharply in periods of tension, it is worthwhile to ask how frequently these periods of tension occur. Our listing of some of the postwar "crises" on preceding pages shows that, on the average, peaks of tension occurred a little less often than once a year. Statistics may be of limited value, but the postwar experience gives at least some indication of what we may expect in the next 10 years without some major changes in the cold war.

It can be argued that the Communist nations are fairly well "contained" at the present and have fewer opportunities for crisis-generating mischief. However, the Berlin question is conspicuously unsettled, the timing of the *U-2* incident could hardly have been predicted, and the rise of Red China presents a troublesome prospect. It seems prudent to assume that there will be, in the 1960's as in the last 15 years, occasional peaks of tension. At these times accidents, of whatever nature, are most likely to lead to war.

Danger Points

The greatest danger, in a time of tension, is that normally insignificant events or accidents may set in motion on both sides a series of events leading to disaster. We might have a kind of self-generating accidental war. Predictions tend to be conjectures. But in a time of moderate tension, let us say, a small war occurs—there have been many of these in the postwar years.

A major power which considers its interest threatened decides to intervene on a limited scale and does so. Its intervention is met by warnings and threats from the other side. One side, and probably then the other, places its forces on some level of alert. Intelligence-gathering processes are under great strain. National leaders are watching events with anxiety. One side places its forces in a higher state of readiness and the other, predictably, follows suit. The danger at this point is enormously heightened by any pressure to launch a preemptive attack. The situation is tense and conspicuously unstable. Any spark—a false radar warning, an accidental overflight, or a failure in communications—could trigger an accidental war.

The critical point in this cycle of events is reached not when one side becomes convinced that the other side is about to attack, *but when either side concludes that the situation has deteriorated to a state where war is inevitable*. This kind of critical point is even harder to specify or to determine in advance; clearly the side which perceives the "inevitability" of war first has the advantage. All this offers the possibility of shortening drastically and tragically the time period over which the strategic guessing game is played.

Occasional attempts have been made to discuss the US strategic deterrent in relation to a "retaliatory threshold": a level of provocation below which strategic retaliation would not be launched. Certainly, both the Western and the Communist nations, in evident recognition of the dangers, tolerate incidents which might in former times have led to war. Overflights, accidental or deliberate, occur; planes are occasionally shot down; radio broadcasts are jammed; abductions occur; insults and threats are traded; and so forth.

Some minor overt acts of war would probably also be tolerated depending on the circumstances. However, because of the extremely wide variety of possible provocations, the significance of an unambiguously defined retaliatory threshold is doubtful. Moreover, a threshold, if it were to reduce the danger of accidental war, would have to be known to the enemy, and this contradicts the long-standing military principle that it is desirable to keep the enemy guessing.

Conclusions

Several major conclusions emerge from this study:

Taking together all the dangers,

there is a significant chance that a major accidental war may occur at some time in the 1960's. The problem of accidental war has received too little public recognition and discussion and, very probably, too little explicit attention in our security planning.

The danger of accidental war rises sharply in periods of international tension. At such times normally insignificant accidents may set in motion a kind of chain reaction of events leading to war. What is predictably improbable in normal times becomes unpredictably probable in abnormal times.

The danger of accidental war depends on the nature and balance of nuclear forces and the states of readiness in which they are held. Vulnerable strategic forces, such as manned bombers and some liquid-fueled ballistic missiles, tend to be dangerous. Next in importance, the danger depends in an unpredictable manner on a variety of human factors, including the predispositions of national leaders for taking or avoiding action.

An accidental war is most likely to come about through the spread of a small war or through major high-level miscalculation. It is relatively unlikely to result from purely technical mishaps *except* when complicating circumstances are present.

The danger of accidental war increases when a nation's policies and intentions are ambiguously stated and poorly communicated to a potential enemy. In the present period of poised nuclear forces and very short reaction times, it is important to be able to distinguish between real policies and propaganda and between idle threats and genuine dangers.

The danger of accidental war increases with the spread of nuclear

weapons and their means of delivery. Red China is a cause for special concern in the 1960's.

We believe that a number of steps to reduce the danger of accidental war are feasible at the present time. Some of these steps will require formal or informal agreement among nations. Others, which have apparently received little serious consideration, can be taken unilaterally by the United States with no significant loss

released without compromising security. Military training operations, including practice alerts and flights, can be conducted in a conspicuously non-aggressive manner. United States strategic doctrine can be made to stress exclusively, in word and deed, a second-strike capability. Imaginative study of this communication problem might reveal many helpful measures. Reciprocal of some of these unilateral measures by a potential en-

Under Secretary of State Designee Chester Bowles has stated that Communist China can be expected to have nuclear weapons in two to three years. In a recent interview he stated, "I would not expect war to be launched by the Soviet Union unless through some tragic miscalculation. . . . Indeed, over the years, my greater concern would center on Communist China."

of military security. Unilateral steps include:

Official recognition of the danger of accidental war and a publicly declared intention to seek ways to reduce the danger.

Recognition, in practice, that the traditional military principle which aims at keeping the enemy guessing at one's intentions may be dangerously out of date in the nuclear-missile age.

In the military sphere, still greater emphasis on relatively invulnerable strategic forces and a flexible nonnuclear capability.

Communication to possible enemies of the manifestly nonaggressive character of US military plans and preparations. More information on weapons system safety measures can be

emphasized to yield very significant gains in the stability of the deterrent balance.

Multilateral measures on which US initiative is needed include:

Clearer recognition and study of the accidental war problem as an important area of arms control negotiations. A variety of small but collectively very significant safeguards against accidental war might be more susceptible of negotiation at this time than, say, a nuclear test ban.

Special study of the possibility of providing very fast and reliable communication between top national leaders on each side to help head off any crisis before it leads to disaster. A number of ingenious safeguards against deception could be built into this "assurance system."

MODERN JAPAN AND THE ERA SYSTEM

*"Events are being buried with
the past by Japan's outmoded
system of recording history"*

**Lieutenant Commander Kiyoshi Kawabata,
Japanese Self-Defense Force**

AT ABOUT the age of 10 I usually had a pretty tough battle completing my homework. One problem was such a strange mixture of history and mathematics that it is still vivid in my memory. "Calculate the age of a man on 10 June 1938 who was born on 25 February in the 23d year of Meiji." I had to get my mother's help because the problem could not be solved without knowing when the Emperors Meiji and Taisho had died.

Recently, I asked an officer acquaintance about his trip to the United States. He ended his interesting account by saying cryptically, without meaning to be cryptic, "I left the Haneda Airport the 32d year of Showa and returned to Japan by way of Hawaii in March 1959." After he left my office I figured with a pad and pencil and by counting on my fingers

how long he had stayed in the United States.

Today, young Japanese officers would have difficulty in answering questions about events that happened in 1941, for example. Some would answer correctly; but most would be wrong due to errors in subtraction and others would need five or 10 minutes to place events in correct chronological perspective.

The Japanese are no less knowledgeable than other peoples about world events, but as long as the Japanese Era system of measuring time in years persists they will find it difficult, if not impossible, to relate the history of Japan with the history of the rest of the world.

To understand a person we need to know his background. To understand a people we need to know their country's history. Does this difference in

ERA SYSTEM

counting years express itself merely as the difference in names of eras between the West and the Orient? Before answering this question it would be helpful to explain the Japanese Era system and its origin.

Origin

The present difficulty goes back to 645 A. D. when the era system was imported into Japan from China. The

a special label to mark a special occasion, a misfortune, or merely as a sign of good or bad luck. The modern revolution of 1868 which introduced the British parliamentary system to the Japanese Government retained the era system with minor modifications.

From 645 to the present Showa Era, Japanese history is divided into 250 eras some of which remind us of

CONVERSION TABLE
Japanese Era to Christian Era

Japanese	Christian	Japanese	Christian	Japanese	Christian	Japanese	Christian
Keie		Meiji		Meiji			
1	1865	16	1883	36	1903	9	1920
2	1866	17	1884	37	1904	10	1921
3	1867	18	1885	38	1905	11	1922
Meiji							
1	1868	19	1886	39	1906	12	1923
2	1869	20	1887	40	1907	13	1924
3	1870	21	1888	41	1908	14	1925
4	1871	22	1889	42	1909	15	
5	1872	23	1890	43	1910	Dec 25	
6	1873	24	1891	44	1911	Showa	1926
7	1874	25	1892	45	July 30	1	
8	1875	26	1893	Taisho	1912	Dec 26	1927
9	1876	27	1894	1		2	
10	1877	28	1895	July 31		3	1928
11	1878	29	1896	2	1913	4	1929
12	1879	30	1897	3	1914	5	1930
13	1880	31	1898	4	1915	6	1931
14	1881	32	1899	5	1916	7	1932
15	1882	33	1900	6	1917	8	1933
		34	1901	7	1918	9	1934
		35	1902	8	1919	10	1935
						35	1960

crux of the system is that each era embraces the years of the Emperor's reign, counted from his accession to his death, and bears his name. Thus 1865, when Keie came to the throne, is the first year of the Keie Era. Frequently, a year within an era carries

significant periods of the past. In theory, these tags help the Japanese understand their history in much the same way that "Elizabethan Period" helps the British and "New Deal" helps the American.

The question arises, why didn't the

government officials who restored Imperial Rule in 1868 abolish this awkward calendar system. Presumably they must have had a glimmering of the link between the Imperial Rule and Japanese Eras. It is my belief that they decided to exploit the absolute authority of the Tenno in every phase of policy to tighten their political hold. Parliamentary procedures were nominally democratic but were frequently overridden in the name of Tenno. The educational policy during the period 1886 to 1945, for instance, was one of nationalism aimed at inculcating the doctrine that Japan was spiritually invincible; that the Emperor and his lineage were direct descendants of the original Tenno who had come from heaven to rule Japan for the ages eternal.

Family Relationship

The government directed all efforts toward strengthening the power of the Tenno. Texts of Japanese history were rewritten to emphasize the family relationship between many mythological gods and goddesses and the Tenno Family Ancestors, thus adding credence to the modern myth. Many shrines and tombs honoring such gods and goddesses were built or rebuilt with government funds and the areas around them were decreed to be "holy and divine" places. Under the system of Imperial Rule which the government promulgated in 1868, it was held that the era system would be more scrupulously observed but the names

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would not be changed as freely as before. Accordingly, the revised system limited era changes to the life span of the Emperor. How small a thing this seems yet how far-reaching the effect.

Without stretching the truth, it can be said that almost all Japanese consider Japan's history completely isolated from the rest of the world. Japanese historical works were revised after World War II, but even so men who recently have been graduated from our schools still have not been trained to relate events in Japan with those elsewhere. It is just too difficult to interpolate the Japanese Era system of fixing dates to the Christian calendar.

Christian Era System

Such historical misunderstanding is not only dangerous but harmful for our future. This dissociated view of history perpetuates the seclusionism and isolationism that persists in Japan today. Since 1945 most Asian countries have abolished their own era names and have adopted the Christian Era system, consequently exaggerating Japan's isolation in historical matters. Technological advances of the 20th century have shrunk the distance between countries at a rate faster than most people can adjust their thinking. Nowadays, even a small incident or a political speech in a remote area possibly could create a stir in the world, as a stone spreads a ripple on a pond. The political world is so tense that a chain reaction could be set off from any point on the globe. Under these conditions, nationally egoistic thoughts are dangerous. The Japanese system of the Tenno Era relates to egoism.

Ever since the activation of the Japanese Self-Defense Forces in 1952,

the problem of leadership has been discussed frequently and seriously. Most officers, however, do not seem to recognize the full implications of the problem. Formerly, the doctrine of leadership in the Imperial Forces was based on the edict of the Emperor Meiji, published to his troops in 1882. The edict prescribed that a senior's words, both officer and enlisted, were to be accepted as though they had been spoken by the Tenno himself. Therefore, "For the Majesty" (for the sake of Tenno) was more compelling to the Japanese soldier than was the doctrine for the Prussian soldier which may be summarized by the saying, "Men must be afraid of their superiors far more than the iron whips."

Strengthen Democracy

Now that the technique formerly afforded by the Emperor's divinity is no longer valid, what is the new doctrine for leadership in our forces? It is obvious that the answer must lie within the doctrine of democracy which ties together the free countries of the world. Unless she fully and completely understands western democracy, Japan will not be able to defend herself in the future. Unless we fully and completely establish democracy in our forces, we will not be able to defend our country in the future.

Today, we know the power of thermonuclear bombs, intercontinental ballistic missiles, and other modern weapons. However, I am convinced that the

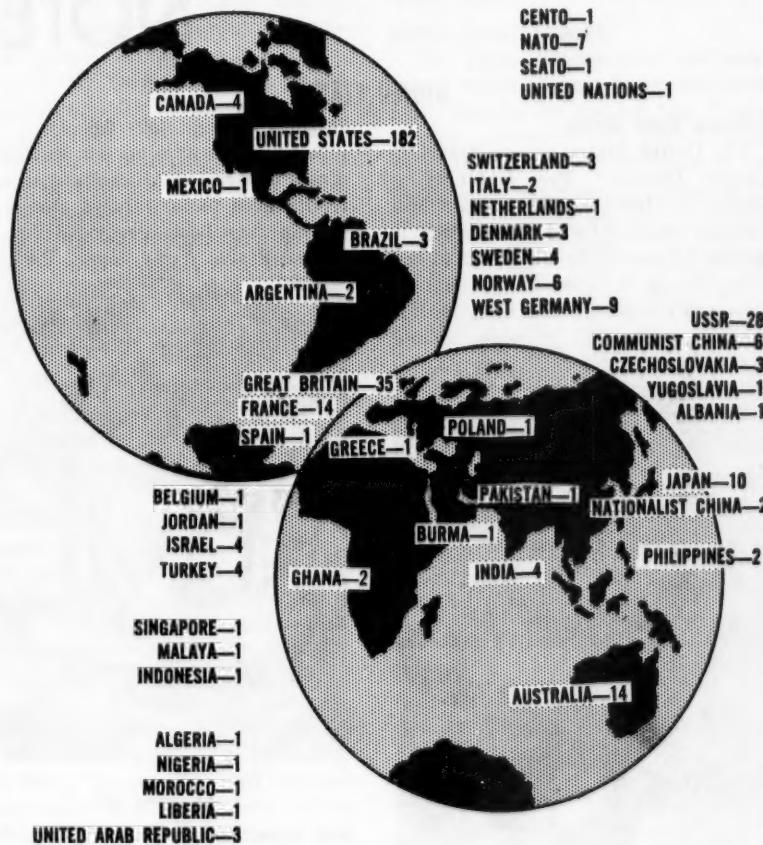
man who operates the weapons of war is the primary element of concern. We must recognize that the more science improves, the more important leadership and outlook become. Admiral Arleigh Burke has said that:

The importance of seapower is becoming more generally recognized throughout the world. The responsibilities of naval officers have increased correspondingly . . . naval officers must continue to broaden their scope of knowledge, not only in national but international affairs as well.

Other top military minds of the Western World similarly have recognized the importance of an international outlook. The point is that not only officers and men of the Maritime Self-Defense Force of Japan can profit from these words but members of the military services of all nations can profit.

Today's precarious world situation suggests that we rigorously strengthen democracy in Japan. The long bridge between Japan, the United States, and Free Europe already has been built. I fear that the Japanese Era system may hinder our crossing this Freedom Bridge, now and in the future. It is proper that we observe and perpetuate the traditional features of our culture which are exemplified by our regard for beauty. But the people, especially the military men of Japan, must be internationally minded. Events are being buried with the past by our outmoded system of recording history.

MILITARY NOTES PUBLISHED IN 1960



In 1960 the MILITARY REVIEW published a total of 377 Military Notes covering the armed forces of 42 countries and four international organizations. The above map shows the countries covered and the number of items published on each. Sources include material in 12 languages from hundreds of official and commercial agencies, military periodicals, foreign governments, and the daily press. The purpose of the Notes is to summarize significant unclassified military developments from a great volume of publications and releases for the convenience of the reader.—Editor.

MILITARY

NOTES

UNITED STATES

Individual Water Heater

The United States Army's Quartermaster Research and Engineering Center is testing an experimental modular combustion heater which is capable of producing six quarts of hot water in 10 minutes in 10 degrees below zero weather. The unit, including burner assembly, windshield, and burner head, weighs only five pounds



US Army

Modular water heater

and folds into a package 12½ inches long, nine inches wide, and four inches thick. The burner assembly contains nine ounces of leaded gasoline fuel.—News release.

Radiation Resistant Solar Cell

A new type of solar cell capable of direct conversion of sunlight to electricity even under intense atomic radiation has been developed by the United States Army Signal Research



US Army

New solar cell

and Development Laboratories, Fort Monmouth, New Jersey. The tiny cell is shown in the accompanying photograph as it is being placed in the chamber of a Van de Graaf particle accelerator to test its atomic endurance. The cell consists of a small disk of specially treated silicon. In this picture it is mounted on a copper block in the engineer's hand. The white coating surrounding the cell is used for test purposes.—News release.

Fuel Storage Developments

New and unusual forms of liquid fuel storage facilities have been announced by the military services.

The United States Army has reported a possible solution to the problem of liquid fuel storage in the Arctic. At Camp Tuto, Greenland, 30,000 gallons of diesel oil have been pumped into an unlined hole 100 feet under the ice. Experts report that the oil can remain in this cavity for years without damage.

The Navy has submerged a 50,000-gallon rubber container onto the floor of the Gulf of Mexico as an underwater warehouse for fuels. It is held down by a light metal frame and a nylon harness.—News item.

New Drone Control System

Field tests have been completed of a new Surveillance Aircraft Flight Control System (*AN/UPW-1*) at the Army's Electronic Proving Ground in Arizona.

The system uses trailer-mounted radar and computer equipment to guide drone-type aircraft on missions over friendly or enemy-held areas.

A portable manpack unit is included for use when the trailer carrying the larger units of the control system must be located away from the launch site. Using the portable unit the controller can launch and visually control the drone until it can be taken over by the trailer-mounted radar.

The complete system consists of radar, computer, plotting board, the portable control unit, an optical tracker, and a portable power supply system. It can be set up quickly and operated by two men. The *AN/UPW-1* provides flight control from launch to recovery.

During operation the drone's flight path is indicated graphically on the

plotting map board at the trailer. During photographic missions the location of the aircraft at the time each exposure is made is also shown.—News item.

40-mm Grenade Launcher

The United States Army will commence issuing a new 40-mm shoulder-fired weapon to replace the 60-mm mortar sometime this year. Designated the *XM79* grenade launcher, the



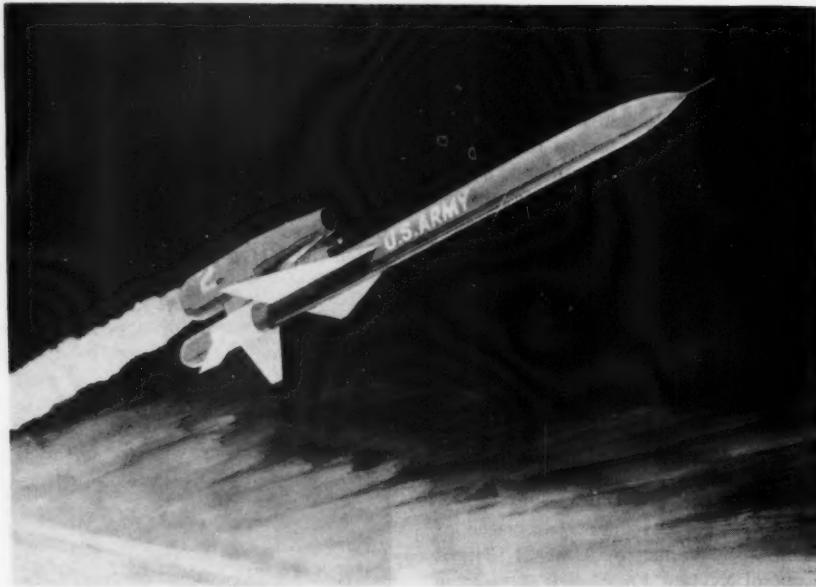
US Army

40-mm grenade launcher

new weapon has a 14-inch rifled aluminum barrel mounted on a short stock. It is 28.6 inches in length and weighs six pounds.

The *XM79* fires a six-ounce projectile from a nine-ounce cartridge at a muzzle velocity of 250 feet per second to a maximum range of 400 meters. The projectile is a high-explosive fragmentation device which breaks into 300 to 400 pieces on detonation. It provides the individual soldier with an area fire weapon suitable for employment against small troop concentrations, weapons crews, or similar targets.—News item.

'Redhead-Roadrunner'



Redhead-Roadrunner target missile

Additional information on the United States Army's new target missile, the *Redhead-Roadrunner* (MR, Dec 1960, p 65), discloses that it will be powered in flight by a ramjet engine located above the fuselage. The disposable solid propellant booster rocket used to launch the missile will be mounted below the fuselage. Recovery of the missile, including the ramjet engine, will be automatic when the fuel has been expended or recovery can be initiated by command from the ground control station. As the missile falls to the ground a drogue parachute will trail out and slow it to a proper velocity for release and opening of the main 30-foot recovery chute. The main chute will not open until the missile has descended to the 10,000-foot level. One of two ground proximity "feelers" will

activate a retrorocket as the assembly approaches the ground to slow it to a soft landing. At landing the chute will be separated automatically from the missile to prevent dragging.—News release.

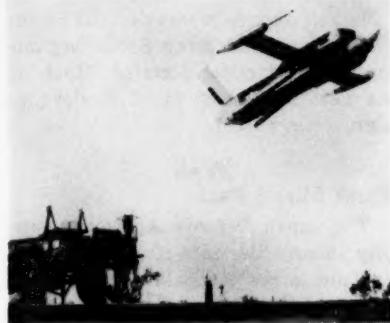
Special Forces Testing

Army psychologists have devised a battery of tests for determining the suitability of an individual for special forces training. On the basis of research at the Fort Bragg, North Carolina, Special Warfare Center, four tests were determined valid for this purpose. These include an Infantry Aptitude Test, a Critical Decisions Test, a Special Forces Suitability Inventory, and a Locations Test to determine the individual ability to retain orientation on unfamiliar terrain.—News item.

Multipurpose Drone

A multipurpose version of the United States Army's *SD-2* drone air vehicle is being developed which will permit it to perform chemical corps missions in addition to missions incident to its battlefield surveillance role.

External configuration will be identical to the present version (MR, Dec



SD-2 drone in flight

US Army

1958, p 65). Modified access doors and internal rearrangement will allow space for installation of chemical or biological agent munitions or surveillance sensor and control equipment.

A quick interchange feature will permit rapid modification of the payload for chemical or biological agent dissemination, airborne photo transmission, side-looking airborne radar, a 70-mm high acuity infrared camera, or a conventional aerial camera system. Flares are combined with several of these systems to provide the necessary day-night capability.

Now in advanced testing stages at the Yuma Test Station in Arizona, the *SD-2* is zero launched from a simple ramp mounted on a light trailer. Two rocket boosters provide initial thrust and are automatically jettisoned as the drone attains speed.

A four-cylinder engine then provides the power necessary for the propeller-driven aircraft to sustain flight.—News item.

Combustible Shell Cases

The United States Army has developed a shell case which is consumed when the round is fired. The new casing is designed primarily for use in tank guns but current testing may lead to its use in artillery weapons as well.

The combustible case reduces costs by eliminating an expensive brass shell case and by reducing the weight of each round. Particularly advantageous in the restricted confines of a tank turret are the elimination of the hot spent shell cases which previously had to be thrown from the vehicle by the loader using protective gloves, and the reduction of the noxious fumes created by rapid firing.

The new case minimizes the gases released during firing and leaves no residue in the gun tube which could cause premature detonation of the succeeding round. It is less susceptible than conventional cases to handling damage such as dents and scratches.—News release.

New Antimalaria Pill

A new antimalaria pill incorporating both chloroquine, a malaria suppressant, and primaquine which destroys malaria parasites in the body has been developed for use by the Army in malarious areas. Requiring only continuous use of one tablet per week, the new drug replaces a therapy which called for weekly dosages of chloroquine during exposure followed by 14 daily dosages of primaquine upon departure from the area.—News release.

MILITARY NOTES

Nuclear Detection

A new seismic research station designed to study the problem of detecting and identifying both earthquakes and underground chemical and nuclear explosions has been completed at Fort Sill, Oklahoma. The station, to be called the Wichita Mountains Seismological Observatory, is part of the United States seismic improvement program known as Project *Velauniform*. The program will seek to improve methods for detecting and identifying underground nuclear explosions.

The station is located in the Wichita Mountains, about 15 miles northwest of Lawton, Oklahoma. The site was selected because the minute vibrations of the earth—called "micro-seismic noise"—which interfere with the detection of signals from distant earthquakes or underground nuclear explosions are exceptionally small in that area.

The program is under the over-all direction of the Department of Defense's Advanced Research Projects Agency.—News release.

WEST GERMANY

Cheaper Nuclear Fuels

Research now being conducted in West Germany may lead to a much less expensive process than the process now in use in the United States for refining U 235, the explosive isotope used in nuclear reactions. The process involves passing a uranium-containing gas through a centrifuge. The lighter molecules containing U 235 are drawn to the center of the spinning centrifuge while the heavier molecules are propelled toward the sides. Electric power required for the centrifuge process is said to be one-tenth of that required to operate the pres-

ent diffusion apparatus of the same capacity. Not yet developed to a point where it is competitive with diffusion devices, the centrifuge process has long been understood in theory and its German designers believe it will soon become practical and economical.

—News item.

EGYPT

Soviet Organization And Equipment

Israeli sources report that the Egyptian Army is adopting Soviet organization and tactical doctrine. Much of its new equipment is of Soviet design.—News item.

JAPAN

Missile Defense Plans

The Japan Defense Agency is rapidly integrating into its ground, sea, and air forces a capability to employ missiles. Current plans call for nine missile-type weapons systems to be operational by 1966. These include five weapons to be developed in Japan and four United States missiles. One *Lacrosse* battalion, two *Hawk* battalions, and four *Nike Ajax* battalions will comprise the units equipped with US Army missiles. In addition, it is planned that three destroyers will be equipped with US *Tartar* air defense missiles. Japanese forces will not be equipped with nuclear weapons for such weapons are prohibited by law.

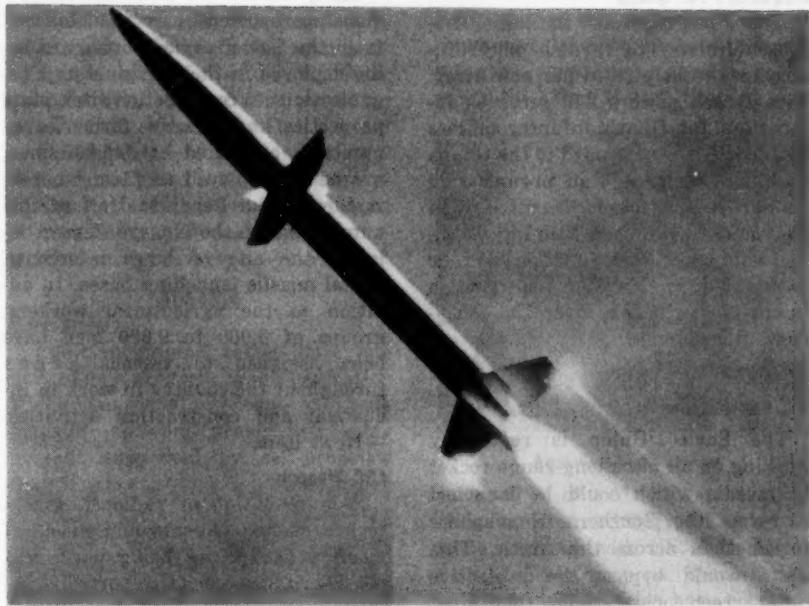
—News item.

NORWAY

Defense Budget

Norway's defense expenditures account for approximately 19 percent of the total 1961 national budget which has been presented to the Storting (Parliament). Defense programs will cost 1.5 billion kroner (170 million dollars) of the 7.9 billion kroner budget.—News item.

GREAT BRITAIN



Blue Water surface-to-surface missile

'Blue Water' Missile

According to recently released information Britain's corps support missile, *Blue Water* (MR, Dec 1960, p 68), is a highly mobile, inertial guidance weapon which can be operated by

a small crew and requires only very few vehicles to support it. It is 25 feet long, has a maximum diameter of two feet, and a wingspan of six feet nine inches.—News item.

GHANA

Canadian 'Beaver' Aircraft Purchased

The Ghanaian Air Force has placed orders for 14 *DHC-2 Beaver* aircraft to be used primarily to fly government personnel to remote areas of the new country. Two aircraft will be fitted with dual controls for training purposes. Six will be equipped for camera installations and will be used in an extensive aerial survey and mapping project. Deliveries on the million-dollar contract are to start immediately.—News item.

AUSTRALIA

Missile Unit Activated

The first British-designed and manufactured *Bloodhound* surface-to-air air defense missiles are currently being integrated into the Australian Air Force as a part of the over-all reorganization and modernization of the armed forces (MR, Feb 1960, p 79). The first *Bloodhound* unit will be activated this month and will be designated Number 30 Squadron. It will be based near Newcastle, New South Wales.—News item.

ISRAEL

Instructors For Ghana

Ghana has requested the Israeli Defense Ministry to furnish officer instructors to help train her new army. Five Israeli officers will serve as instructors for Ghana infantry officers and four will be seconded to the Ghana "Builders Brigade," an organization similar to the Israeli *Nahal*. Israeli instructors have been training Ghanaian pilots but this function will be terminated in March when British instructors will take over the job.—News item.

USSR

End Run Missiles

The Soviet Union is reportedly working on an ultra-long-range rocket or missile which could be launched across the Southern Hemisphere rather than across the Arctic. This route would bypass the protective radar screen constructed by the United States and her allies to guard the shorter, more direct approach. A missile with this capability would require a range of 10,000 to 15,000 miles, dependent upon the location of bases.—News item.

Nuclear-Powered Aircraft

The Soviet Union is reported to have a nuclear-powered aircraft in the ground test stage of development. Unofficial information indicates that the plane is a modified *Bounder* with a 200-foot fuselage and a wingspan of 80 feet. Available information on the *Bounder* is very limited, but it is reported to be a delta wing supersonic bomber comparable to the United States *B-58*. In its more conventional configuration it employs four turbojet engines in individual underwing pods.—News item.

Soviet 'Disarmament'

Many of the 1.5 million men previously reported as "demobilized" from the Soviet armed forces are being deployed in their original unit organizations to construction sites, state properties, and collective farms. Large numbers, estimated at 145,000 men, are being employed as farm laborers in the Kazakh Republic. Half of this number are in the Novaya Zemlya islands, the site of large intercontinental missile launching bases. In addition to the agricultural workers, groups of 3,000 to 9,000 men have been assigned to various areas throughout the country to work in industrial and construction activities.

—News item.

ABC Weapon

A combination of radioactive materials, chemical agents, and biological warfare agents are being used in a munitions component reportedly being developed by the Soviet Union. The component is said to be adaptable to artillery shells, land mines, or aerial bombs. The combination of agents also can be used as smoke, dust, or a spray, and produces afflictions in men and animals which almost defy diagnosis. The chemical agent produces breaks in the skin through which disease germs of the biological agent penetrate into the body. The radioactive agent reduces the body's natural resistance and increases the susceptibility and the violence of the disease.

—News item.

New Transport Aircraft

The Soviet Union is reported to have successfully flown her new *Tu-124* transport aircraft. Designed primarily as a passenger aircraft the *Tu-124* will carry 44 persons and is reported to have a cruising speed of 500 to 525 miles per hour.—News item.

THE NETHERLANDS

Missile Plans

The Netherlands is scheduled to have four air defense squadrons equipped with United States *Nike* weapons by the end of 1961 according to unofficial reports. The Dutch Army is also reported to be planning procurement of the US Army's *Sergeant* surface-to-surface ground support missile and the French *SS-11* wire-guided antitank rocket.—News item.

AUSTRIA

More Armor

Austrian ground forces have embarked on a program of mechanization which is expected to produce two tank brigades and one armored infantry brigade supported by self-propelled



Austrian armored infantry

artillery. The two tank brigades with three battalions each were activated on 1 August from school troops of the Austrian Armored School and the former 3d Infantry Brigade. Armored

carriers have been assigned to troops of the 1st Infantry Brigade and it is believed that this is the first step in conversion of that unit to armored infantry. Austrian armored units are currently using United States manu-



Austrian tank troops

factured *M-47* and *AMX-13* vehicles. Nine armored artillery batteries are to be equipped with US *M-7* self-propelled 105-mm weapons. Each armored artillery unit will also have a battery of four Czechoslovakian rocket launchers.—News item.

COMMUNIST CHINA

Missile Submarines

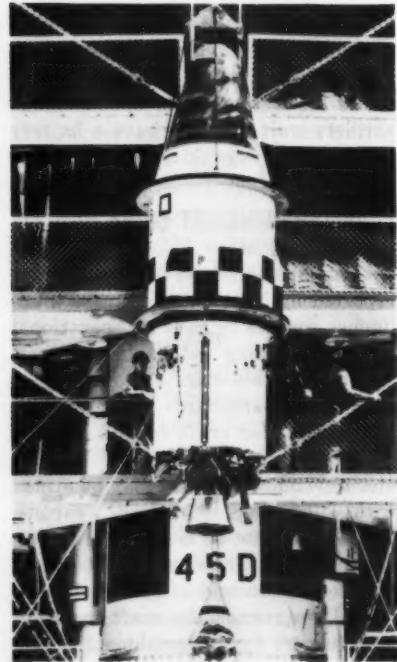
Communist Chinese naval forces are reported by Nationalist Chinese intelligence sources to have an operational missile-launching submarine. Reportedly of the *Zulu* class (approximately 1,850 tons standard displacement) the underwater craft is said to have been modified to carry two *T-10* Soviet-type missiles which may be armed with high-kiloton nuclear weapons. The *T-10* cannot be launched from underwater. The missiles cannot be resupplied at sea and after expenditure of its two rounds the craft must return to port for replenishment.

Communist China's fleet has been estimated to include from 20 to 50 submarines.—News item.

SPACE RUNDOWN

Since 4 October 1957 when the Soviet Union placed *Sputnik I* in orbit to become, at least chronologically, the world leader in space, the United States has exceeded the USSR in successful satellite launchings at a rate of better than four to one.

Using orbital life as a criterion the success of the US program is even more striking. More than half of the successful launchings by this country have resulted in satellites that still remain in orbit. Many of these are still actively transmitting scientific data back to earth. As of this writing only two Soviet satellites remain in orbit.



5,000-pound *Midas II* being lifted onto its launch vehicle

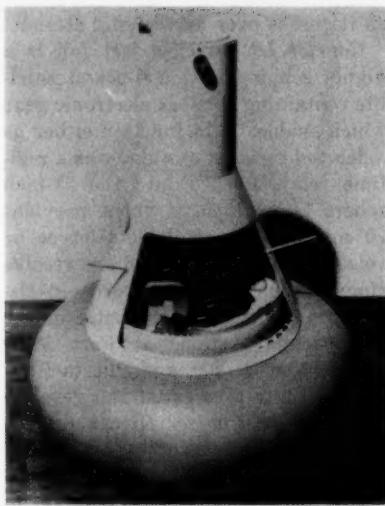
The Soviet Union has orbited the largest payload. *Sputnik IV* carried a spacebound cargo weighing 10,008 pounds. The United States *Midas II*, launched on 24 May 1960, carried a payload of 5,000 pounds. The US Army's *Courier IB* communications satellite weighed 502 pounds, and the Air Force's *Discoverer XVII* carried a 2,100-pound payload. The best orbit obtained by a Soviet satellite has an altitude deviation of 238 miles between its apogee and its perigee. Two US space vehicles have obtained near-perfect orbits with differentials of only 37 and 30 miles.—News item.

Future Space Plans

The National Aeronautical and Space Administration (NASA) has announced plans for space exploration during the next 10 years calling for:

- 62 launchings as part of the program to develop launch vehicles.
- 41 manned space flight missions.
- 96 scientific satellite launchings.
- 33 lunar and planetary firings.
- 28 launchings in preparation for satellite shots.

Project *Mercury*, the first US man-in-space effort, should be far enough advanced to permit the launching of a manned capsule down the Atlantic Missile Range early this year. Originally scheduled for 1960, slippage in the program has caused the first launch to be delayed. The dependable *Redstone* missile booster developed by the US Army will be used in this test to lift the first US astronaut to a height of 125 miles and 200 miles down the Atlantic range. The first manned orbital shot, also an objective of Project *Mercury*, is scheduled for later this year.



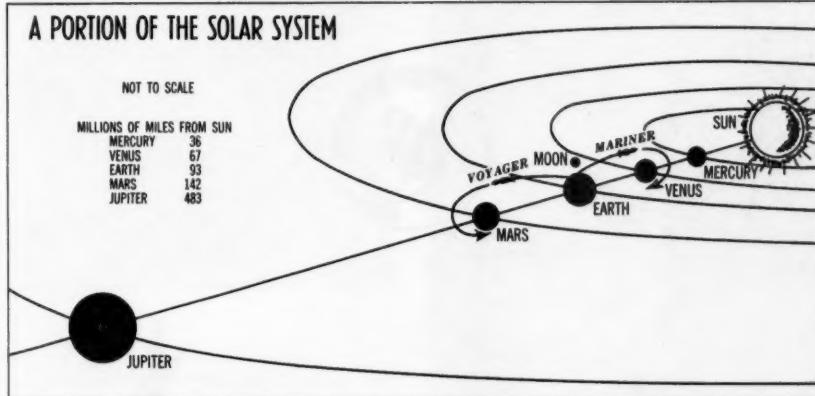
Mercury manned space capsule. After ejection a parachute will lower the capsule to land or water. An inflatable ring at the base will ease the shock of landing and provide flotation.

Apollo, NASA's three-man spacecraft program which will follow *Mercury*, is also scheduled to get under way this year. Based on studies now being made it is anticipated that production orders for *Apollo* will be placed

in 1961 with development and manufacture to be accomplished in the 1962-65 period. Orbital missions could begin as early as 1966 with circumlunar missions following.

Other new space projects announced by NASA will be named *Surveyor*, *Mariner*, *Ranger*, and *Voyager*. The *Surveyor* craft will be designed to make "soft" landings on the moon with an operational load of scientific instruments. *Ranger* will be designed for "hard" lunar landings with the vehicle presumably being destroyed on impact. *Voyager* and *Mariner* are to be unmanned interplanetary spacecraft. *Voyager* is to be used for an instrumented probe to the vicinity of Venus or Mars, and to eject a space capsule for reentry. It will employ the *Saturn* booster. *Mariner* is planned as a 600 to 1,200-pound craft for early interplanetary missions. It will be lifted by an *Atlas-Agena B* booster.

Manned flights around the moon are programmed for the 1965-67 time period, and landings on the moon with subsequent return to earth are expected sometime after 1970.—News item.



Voyager and *Mariner* vehicles will explore adjacent planets

Communications Satellites

Current and future NASA programs provide for two projects in the communications satellite field. Both are passive radio relay devices. The first, Project *Echo*, was a 100-foot inflatable balloon launched last August into a 1,000-mile orbit around the earth. Directional radio signals have been successfully bounced off the surface of *Echo* from a transmitter on the earth's surface to a receiver at a distant location.

Project *Rebound*, still in the study stage, is NASA's proposal to place a series of 12 or more passive satellites into orbit sometime in the 1963-65 period. This number of passive satellites, spaced at intervals around the world, will be required to provide continuous communications.

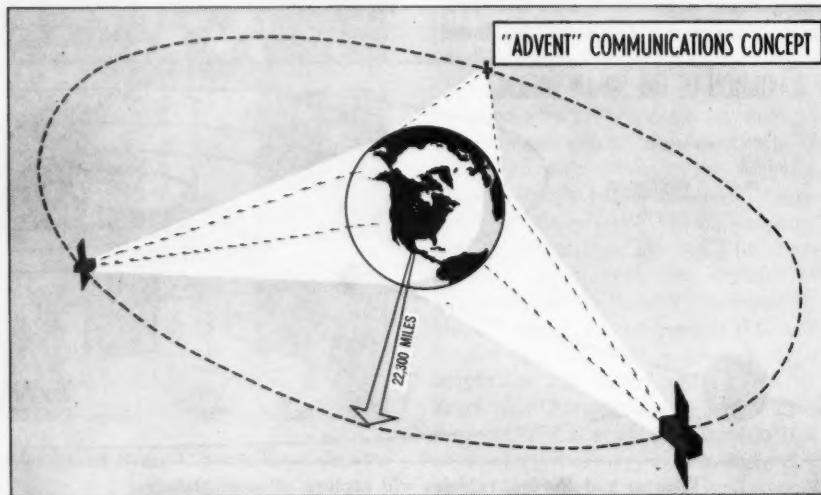
The Army has taken the lead in the active communications satellite field with its *Score*, *Courier*, and *Advent* programs. Project *Score* is a delayed repeater system which receives and stores signals as it passes over a transmitting station and retransmits them

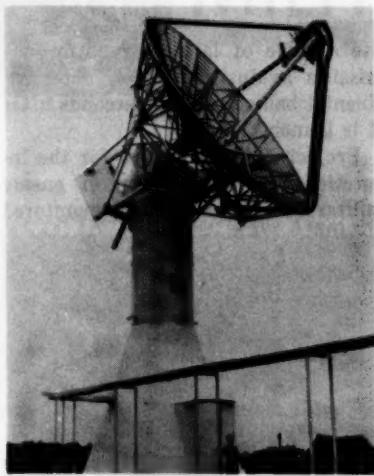
as it passes over a receiving station.

Courier IB launched last fall is a highly sophisticated 500-pound satellite containing complex electronic gear which enables it to function either as a delayed repeater station or as a real-time relay. Packed into the 51-inch sphere is equipment which provides 20 continuously available teletype or voice channels. It can send and receive simultaneously 340,000 words in the five minutes it is within range of the two ground stations at Fort Monmouth, New Jersey, and Puerto Rico.

Essentially a research and development vehicle, *Courier IB* can become an element in an eventual worldwide network of communications satellites.

Project *Advent*'s objective is to demonstrate the feasibility of a communications satellite orbiting at the same relative rate as the rotation of the earth. *Advent* will be a 1,000-pound package orbiting at a height of 22,300 statute miles. Because of its 24-hour orbit it will appear to be fixed in space directly over a point on the surface of the earth.—News item.



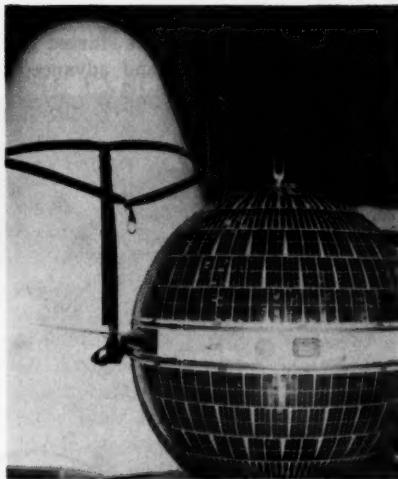


Twenty-eight-foot parabolic antenna which serves as the "ears" for the *Courier* satellite. This antenna at Fort Monmouth, New Jersey, and a similar one at the Space Communication Center, Caribbean Signal Agency, Puerto Rico, serve as ground stations for the orbiting satellite

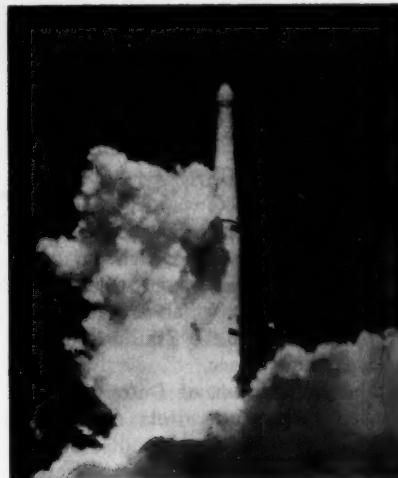


US Army Signal Corps Laboratory, Fort Monmouth, New Jersey, center of research for the Army's communications satellite program

The *Courier* satellite, below, stands beside the nose fairing of the missile which carried it into space



The *Thor Able Star* vehicle, below, which carried the US Army's *Courier IB* satellite into space

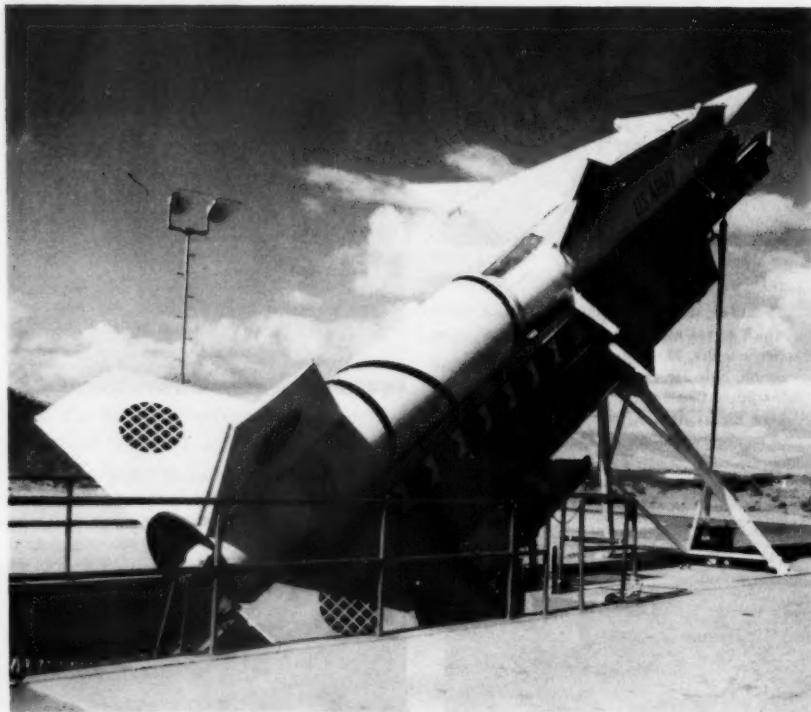


Space Defense Programs

The most advanced United States weapons system for defense against attacks through space is the US Army's *Nike Zeus* antimissile missile (MR, Dec 1960, p 60). Component firing tests for the *Zeus* were started in the first half of 1959 and advanced

lite capable of launching antimissile missiles against an enemy intercontinental ballistic missile seconds after it is launched.

Project *Saint*, a system for the inspection and interception of enemy military satellites, is being monitored



US Army

US Army's *Nike Zeus* antimissile missile

full systems tests are scheduled for the end of this year or early in 1962.

Three other programs are now in the concept stage which are designed to protect the United States from attack through space.

The Department of Defense's Advanced Research Projects Agency is working on a series of studies designated *Bambi* which visualizes a satel-

by the US Air Force. The first test launch of a *Saint* may be made this year.

Spad is a commercially sponsored study aimed at the development of a satellite that would provide early warning of an enemy launching and alert ground based defense missiles or launch an antimissile missile itself.

—News item.



MILITARY BOOKS

NATO IN THE 1960's. By Alastair Buchan. 131 Pages. Frederick A. Praeger, Inc., New York. \$3.00.

BY LT COL OTTIS M. PLANT, *Arty*

This book is the first published study from The Institute for Strategic Studies (ISS), London. The Institute was founded in November 1958 under a grant from the Ford Foundation and is a nonpartisan organization with international membership.

Mr. Buchan's book represents his own attempt to formulate the problems facing NATO, and to suggest answers considered by the first Annual Conference held in Oxford.

The principal recommendation put forth by the author is that an ambitious political aim must govern NATO's second decade with a firm purpose, or tension between its members will grow, and "its strategic planning will be a hand to mouth affair." A system of deterrents not controlled by any one of the NATO nations, but under the command of the alliance itself, and a greatly expanded capacity for conventional military forces and reserves is necessary.

This book is an excellent reference to acquaint military readers with many vital problems facing NATO. It will stimulate thinking and cause the reader to make a discriminating appraisal of this international security organization. It contains much factual data concerning major problems which will affect military planning and operations in the 1960's.

THE EXECUTIVE OVERSEAS. By John Fayerweather. 195 Pages. Syracuse University Press, New York, 1959. \$4.00.

BY MAJ SAM H. SHARP, *Inf*

Dr. Fayerweather has researched the executive relationship of representative foreign executives and the American businessman to show ways of learning to understand the patterns of foreign administrative behavior and personalities, both national and individual. The need for understanding is obvious, but the author illustrates the actual complexities of executive relationships with frequent individual case studies to clarify his observations.

This study presents a more advanced appreciation of personality characteristics and relationships presupposing in the reader a basic knowledge of management principles and techniques. This material should be of great practical value to executives in determining overseas managerial assignments.

Dr. Fayerweather is eminently qualified to write on business relations from his intimate contact with American business overseas. Formerly of the faculty of the Harvard Business School, he now is Associate Professor of International Business at Columbia University.

This book is recommended for serious, purposeful study. It is for business executives rather than military men, although they may profit by it.



WHY THE NORTH WON THE CIVIL WAR. Essays by Richard N. Current, T. Harry Williams, Norman A. Graebner, David Donald, and David M. Potter. 129 Pages. Louisiana State University Press, Baton Rouge, La., 1960. \$2.95.

BY LT COL HORACE M. BROWN, JR.,
Arty

Why the South lost the Civil War has been and probably will continue to be an intriguing subject for study by students of the political and military sciences and history. *Why the North Won the Civil War* is a series of five treatises, each by a professor of history at a major United States university. Each propounds a different reason for the outcome of the war and each substantiates his case well. Edited by David Donald, the book contains a foreword by Major General



U. S. Grant, III, United States Army, Retired.

If we must select the single, most important reason the South did not win, we must choose the inadequacy of Jefferson Davis to his task. Although the North did have a marked economic superiority, the superiority was made even more marked due to bad economic decisions by Jefferson Davis and his Cabinet, particularly in the handling of cotton. He was responsible for the selection and retention of the inadequate generals, primarily in the western theater. He interfered actively with the good ones—such as Lee and Jackson—when he should have been rendering them maximum support.

He neglected to rectify the harmful effect of independent state actions which hurt the cause of the Nation. He tolerated such weaknesses as the election of lower ranking Confederate officers by their subordinates, delay in conscription, and the failure to use Negro manpower because it was regarded as private property. Finally, and in this he probably is less to blame than in the other cases, he did not push or support diplomatic overtures to England, France, Russia, and Prussia to the degree required for success.

This volume is a definite asset to the writings on the Civil War period.

1961 brings the 100th Centennial of the War of the Rebellion (the Civil War). This milestone in the history of our country has been marked by a large number of new Civil War books. Featured on these pages are short reviews of some of the recent volumes.

THE WILDERNESS CAMPAIGN. By Edward Steere. 522 Pages. The Stackpole Co., Harrisburg, Pa., 1960. \$7.50.

BY MAJ RALEIGH O. TAYLOR, Inf

At high noon on May 5, 1864, Lieutenant General Ulysses S. Grant, supreme commander of the United States field forces and personally directing operations of the Army of the Potomac and the independent IX Corps, joined battle in the Wilderness with General Robert E. Lee, commanding the Army of Northern Virginia. They fought to a tactical impasse.

As nightfall on the 6th stilled the roaring musketry, both armies lay exhausted amid forest fires that gave a final touch of horror to the stricken battlefield. The moaning of the unrecovered wounded, many of whom perished hideously in the spreading flames, mingled discordantly with the chorus of whippoorwills and other nocturnal creatures of the forest.

With these words, author Steere sets the stage for a factual and detailed report on the first four days of the Wilderness Campaign.

Commencing with Grant's concentration of the Army of the Potomac and the IX Corps, south of the Rappahannock, on 4 May and ending with the movement of both armies toward Richmond on 7 May, Mr. Steere ac-



counts for the actions and orders of almost all commanders in both armies down to and including brigade commanders. The maps used to make details more clear to the reader are excellent.

In addition to the main theme of the book, Mr. Steere illustrates several problems which were evident in both armies. The dual command system in the Union Army, with both Grant and Meade in the field, presented the usual problems found in such an arrangement. The lack of emphasis on collection and evaluation of intelligence, and work by untrained staffs created problems for both the North and the South.

Students of military history and especially those interested in the Civil War will enjoy this book immensely. However, the great amount of detail presented may detract from the interest of the casual reader.

MILITARY BOOKS

GRAY GHOSTS OF THE CONFEDERACY. Guerrilla Warfare in the West, 1861-1865. By Richard S. Brownlee. 274 Pages. Louisiana State University Press, Baton Rouge, La. \$4.95.

BY MAJ ROBERT C. BURGESS, *Arty*

During the Civil War, violent guerrilla actions were fought in the frontier states of Kansas and Missouri. This book is a fine analysis of these operations, including detailed discussions of the leaders, their men, and their operating procedures. The author also examines the broad issues involved in the establishment of martial law by Union forces in the area, and the concomitant abridgment of civil rights of the populace.

In many cases, the guerrillas of the West were no more than bands of brigands, given to wanton pillage, destruction, and murder in affording their impression of assistance to the legitimate forces of the Confederacy. They were led by desperate men, many still in their teens; some of their number turned to a life of violent crime following the hostilities. Among these were Jesse and Frank James and Coleman and James Younger.

The relatively small-size guerrilla forces had telling effect on Union forces of the border, facing the Northern commanders to tie up huge forces in attempts to control their activities. Throughout the territory the guerrillas "created such fear and disorganization that in many areas normal society collapsed entirely."

This is a book well-worth reading for those interested in a different account of Civil War action, and for professional soldiers who want to learn more about the problems, methods, and consequences of controlling partisans in an unfriendly or neutral area.

GRAPE AND CANISTER. The Story of the Field Artillery of the Army of the Potomac, 1861-1865. By L. Van Loan Naisawald. 593 Pages. Oxford University Press, New York. \$10.00.

BY MAJ KEITH C. NUSBAUM, *Arty*

Frequently, a book of history appears which makes the reader wonder whether or not what we know today as "new military thought" is really new. This is such a book. *Grape and Canister* covers the history in combat of the artillery of the Army of the Potomac.

The hero of the book is General Henry Jackson Hunt who could properly be termed the "Father of the US Army's Field Artillery." Hunt originated, in the stress of combat, the foundations of what are considered today to be the doctrine of artillery employment—massed fires and centralized control. Confederate commanders (among them Jackson and Daniel H. Hill) stated that the Federal artillery was consistently excellent, often better than their own, particularly at Gettysburg.

Grape and Canister traces the growth of the US Army artillery at the beginning of the Civil War from two regiments of Regular troops to the multitude of various units in the field at the close of the war with the Army of the Potomac.

An appendix discusses in detail the various types of ammunition employed, and notes are available for additional reference purposes. A major deficiency of the book is the lack of an illustrated discussion of the weapons employed.

This book is a companion volume to Jennings C. Wise's, *The Long Arm of Lee*, the story of Confederate artillery in the Army of Northern Virginia.

STORMING OF THE GATEWAY. Chattanooga, 1863. By Fairfax Downey. 303 Pages. David McKay Co., Inc., New York, 1960. \$5.50.

BY LT COL WILLIAM D. BEARD, *Inf*

The military operations around Chattanooga in the fall of 1863 were among the most decisive of the Civil War. They followed the Union victories at Gettysburg and Vicksburg the previous summer, and served as a prelude to the campaign for the industrial heart of the Confederacy which was culminated in Sherman's capture of Atlanta in 1864.

Seldom has a military campaign affected the reputations and future of so many of the generals on both sides. The reputations of Rosecrans, the Union commander, and Bragg, the Confederate commander were destroyed; while those of Grant, Sherman, Sheridan, and Thomas were enhanced.

Fairfax Downey has presented the historic facts of the Union debacle at Chickamauga, the siege and relief of Chattanooga, and the decisive battles of Lookout Mountain and Missionary Ridge in a vivid, descriptive, and interesting manner. Then in a style for which he is noted he has added many interesting and little-known details such as the background of the soldiers, a description of the weapons of the opposing armies and of the personalities of the opposing commanders, and the order of battle for both the Union and Confederate Armies.

Colonel Downey is well-known for his books on the Civil War which are noted for thoroughness of research and accuracy of detail. This book is no exception; it is a worthwhile contribution to the military writings on the Civil War.

THE FALL OF RICHMOND. By Rembert W. Patrick. 138 Pages. Louisiana State University Press, Baton Rouge, La. \$4.00.

BY MAJ RALEIGH O. TAYLOR, *Inf*

Covering the period 2 to 4 April 1865, the author tells a factual story of the fall of Richmond during the last days of the Civil War.

The book opens on a calm and cheerful Sunday morning with President Davis and his Cabinet attending church services with the remainder of the citizens of Richmond. The reader is led through the evacuation of the city by Confederate Government officials and the withdrawal of Lee's Army of Virginia.

The fire on 3 April consumed most of the Confederate warehouses on the James River and a great share of the business houses. During the fire, when the citizens of Richmond procured barrels of whiskey and passed it out freely, the population became a drunken mob ruled by riot and plunder. Late on 3 April elements of the Union Army, under the command of Major General Weitzel, entered Richmond and established martial law.

President Lincoln, who for more than a week had been on the *River Queen* anchored off City Point in the James River, visited Richmond on 4 April. He departed that same day convinced that the city was under control.

Author Patrick has gathered this account from newspaper reports, diaries, eyewitness accounts, letters, and official documents. His efforts to render a factual report are rewarded.

The reader will find that this book provides an excellent insight into economic, social, and governmental conditions of the Confederate states during the last days of the Civil War.

THE BATTLE OF GETTYSBURG. A Guided Tour. By General Edward J. Stackpole and Colonel Wilbur S. Nye. 96 Pages. The Stackpole Co., Harrisburg, Pa., 1960. \$1.00.

This is an illustrated paperback volume which provides the visitor to Gettysburg a guide over a 55-mile tour of the battleground. Also included is a concise narrative of the campaign and a comprehensive order of battle.

HORSEMEN BLUE AND GRAY. A Pictorial History. By Hirst Dillon Milhollen, James Ralph Johnson, and Alfred Hoyt Bill. 236 Pages. Oxford University Press, New York, 1960. \$10.00.

An account of the part cavalry played in the Civil War, *Horsemen Blue and Gray* tells its story largely through photographs, sketches, and portraits. Probably one of the best pictorial records of the War Between the States, this handsome volume would be a worthwhile addition to any library on the Civil War. The text, which ties the numerous illustrations together, is full of historical anecdotes and pertinent quotations by and of the men who led the mounted troops of both the North and the South.

OTHER SIGNIFICANT BOOKS ON THE CIVIL WAR PUBLISHED IN 1960:

Lincoln Finds a General, Kenneth P. Williams. (MR, Jan 1960)

Clash of Cavalry, Fairfax Downey. (MR, Jan 1960)

Generals in Gray, Ezra J. Warner. (MR, Apr 1960)

The Shaping of a Battle: Gettysburg, James Stuart Montgomery. (MR, Apr 1960)

Prudent Soldier, Max L. Heyman, Jr. (MR, May 1960)

Mr. Lincoln's General. U. S. Grant, Edited and arranged by Roy Meredith. (MR, Jun 1960)

The Civil War Dictionary, Lieutenant Colonel Mark Mayo Boatner, III. (MR, Jun 1960)

From Cedar Mountain to Antietam, Edward J. Stackpole. (MR, Jun 1960)

Grant Moves South, Bruce Catton. (MR, Aug 1960)

Stonewall Jackson, Lenoir Chambers. (MR, Aug 1960)

P. G. T. Beauregard—Napoleon in Gray, T. Harry Williams. (MR, Oct 1960)

Colonel Elmer Ellsworth, Ruth Painter Randall. (MR, Oct 1960)

Civil War in the Making, Avery D. Craven. (MR, Oct 1960)



MILITARY REVIEW ANNUAL AWARD WINNER



US Army

Lieutenant Colonel Anthony L. Wermuth, Infantry, is presented a \$350 check by Major General Thomas W. Dunn, Commandant, U. S. Army War College, Carlisle Barracks, Pennsylvania, for the 1960 award winning article. Colonel Wermuth's article, "A General Staff for America in the Sixties," was published in the February 1960 issue of the **MILITARY REVIEW**.

The presentation of the award was made by General Dunn on behalf of Major General Harold K. Johnson, Commandant, U. S. Army Command and General Staff College. A faculty judging committee of the U. S. Army Command and General Staff College selected Wermuth's article from the 12 award winners announced in the November **MILITARY REVIEW**.

Colonel Wermuth is a 1940 graduate of the United States Military Academy. He holds a Master of Arts degree from Columbia University and was graduated from the Army War College in 1959. His military service includes duty as battalion commander and G3 of the Southern Landing Force on Kiska Island during World War II; instructor and assistant professor at the Military Academy; Assistant Secretary of the General Staff, Office of the Chief of Staff, Department of the Army; Plans Division, Office of the Assistant Chief of Staff, G3; and command of the 2d Battle Group, 12th Cavalry, in Korea. He has been a frequent contributor to the **MILITARY REVIEW**. He won the annual award in 1957.



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